THE SUITABILITY OF INDUSTRIES TO NON-METROPOLITAN COMMUNITIES: THE CASE OF THE ISRAELI DEVELOPMENT TOWNS OF YERUCHAM AND DIMONA

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ABSTRACT

This thesis discusses the suitability of industries to non-metropolitan communities by analyzing the case of two development towns in Israel, Yerucham and Dimona.

A model is constructed to describe the dynamics of the current crisis in the industrial base of these communities. The model depicts the interrelationships and interactions among the three major components participating in the situation: the community, the industry, and the governmental policies.

It is found that the main cause for the weakness of the economic base of the towns is the deterioration in the "suitability" between the existing local plants and the changing characteristics of the communities' labor force. It is suggested that due to the government's policies the "island phenomenon"--the existence of communities with the characteristics of developing countries within the context of a developed society--was reinforced.

Historically, the situation has evolved as a result of an unequal development of the industrial sector and the communities, while the government which was heavily involved in the initial stages of development has gradually abandoned its involvement.

In the last section of the thesis some suggestions for making industries more suitable for non-metropolitan communities are given.

Thesis Supervisor: Professor Donald A. Schön

Title: Ford Professor of Urban Studies and Planning

To my parents,

for whom the reality

was a dream.

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INTRODUCTION

Israel has launched, vigourously at times, a population dispersal policy aiming to redistribute the population from the metropolitan urban centers along the coast to the southern and northern parts of the country. Development towns were used as the primary mechanism for pursuing the population dispersion goal.

The extent to which the development towns have succeeded or failed has been the focal issue studied in the late 1960s and at the beginning of the 1970s (Spiegel, 1966; Berler, 1970; Litchfield, 1971; Shachar, 1971). Various indicators have been used to evaluate the extent to which they have been successful, concentrating mainly on statistical measures of population movement. Based on these studies and others, the policy to disperse the population has been considered to be quite successful even though it did not live up to the expectations and planned objectives (Zilberberg, 1973).

For the last few years, two of the southern development towns, Yerucham and to a lesser extent Dimona, as well as several other development towns have begun facing increasingly difficult circumstances. The main evidence for

the stage of crisis has been the increasing rate of emigration especially among the young adults and the discharged soldiers. Politicians, bureaucrats and public figures on the local and the national level, as well as the residents of these communities, pointed to the employment area as the main source of dissatisfaction and hence emigration. In this area a paradoxical phenomenon has surfaced: an increasing rate of unemployment on one hand, and a severe shortage of needed workers in the industrial plants on the other hand, especially in plants belonging to the group of "first generation" plants (established during the late 1950s and the early 1960s). These plants have filled the job vacancies with Arab labor-force from the administered territries--the West Bank and the Gaza Strip. The plants have also faced operational and financial problems, stemming from competition in the local and especially the export markets.

Various theories have been used throughout this study to accoount for the situation. Location theory, for example, (Hoover, 1948; Isard 1956; Klaassen, 1967; Carlton, 1979 and many others) helped in understanding why some plants have failed--due to inadequate selection of the product or because of ignoring the disadvantageous location of the towns. Studies of the selection process of appropriate technologies (Eckaus, 1977; Anderson, 1979; Shumacher, 1970; and others) contributed to the

understanding of the misuse of technology in several plants and its effects on the employees. These theories, coupled with studies conducted so far on the issue of industrialization of development towns in Israel (Kipnis, 1976; Gradus and Krakover, 1977; Toren, 1979; Gradus and Einy, 1970; Bar-El et al., 1981) did not fully account for the evolution of the situation and its effects on the community.

The objective of the study was to explore the meaning of "suitable industries for non-metropolitan communities" in a dynamic context--over time. The study strived to construct an operating definition for "suitability" which would help in understanding and evaluating undergoing industrialization processes as well as creating a planning tool for designing and implementing industrialization policies.

The research questions analyzed by this study were:

1. What were the historical causes of the weakness of the industrial base of the development towns, and why has the industrial base deteriorated over the last several years?
2. What have been the effects of the weak industrial base on the communities, over the years?

The concept of the "island phenomenon" was suggested as a framework for understanding the weak economic and social base of the non-metropolitan industrial towns.

It was hypothesized that the development towns have been "islands"--possessing characteristics of developing countries, within the context of the developed society of Israel. The roots of the problems lie in the relative success of the non-metropolitan industrial towns compared to the other towns and to the rest of the country. In this relative progress measured by the level of education, income, size of apartment per person, rate of motorization and other indicators of the standard of living, one may find the roots of the problematic situation.

A model was constructed to describe the development of the situation. The model depicted the interrelationships and interactions among the three major components participating in the situation: the community (in the development town), the industry and the governmental policies.

The study was based mainly on extensive interviews with politicians, policy makers, and administrators on the local, regional and national levels, and with residents in both towns. In the industrial area, interviews were conducted with entrepreneurs, managers and heads of personnel departments in the local and regional plants, as well as with employees and their representatives. In addition, published material--especially statistical data--was analyzed.

The two development towns of Yerucham and Dimona, were selected for the detailed case-studies due to three main reasons:

1. Both towns are physically remote from the metropolitan areas and thus serve the population dispersal goal, more than other development towns which are located closer to the central parts of the country. In this way, the study captured the "distance" issue in industrialization of development areas.
2. Both were initially established as industrial-based towns. Many of the other development towns were initially established to be the service centers for the rural settlements in their respective regions. However, adequate links between the new towns and the already existing and self-sufficient infrastructure built up among the collective villages were not established, and as a result, they have been turned later into industrial towns.
3. These towns represent very different rates of success. Dimona has been considered for a long time a successful development town, while Yerucham, inspite of the physical proximity to Dimona, has encountered difficulties since its establishment. Both were facing difficulties and problems at the time of the study which were shared, to various

degrees by some other non-metropolitan industrial towns.

The dissertation contains eight chapters, brief summaries of these chapters are:

Chapter I: Israel--The History of the Population Dispersal Policy and the Establishment of the Development Towns. This chapter surveys the history of the population dispersal policy in Israel, with a special emphasis on the validity and justification of the goal. The role of the development towns in implementing this policy is described.

Chapter II: Literature Review. This chapter examines the various theories and studies relevant to this area of research. It analyzes the ways the literature deals with the subject and points mainly to its weaknesses in giving a comprehensive explanation to the whole pheonomenon.

Chapter III: The Socioeconomic Development of Yerucham and Dimona. Description of the historical development of the two towns, in the context of the national development. A special attention is given to social, demographic and educational development.

Chapter IV: Description of the Current Situation of the Development Towns--The "Island Phenomenon." The "island phenomenon" is defined as a situation in which the community in a development town has characteristics of developing societies in the midst of a country with characteristics of

well-developed societies. It is hypothesized that this phenomenon has a strong impact on the community, its labor force and their behaviour. The phenomenon is examined from three angles:

1. The socioeconomic perspective.
2. The industrial and employment perspective.
3. The subjective perception of the phenomenon by the residents of the towns and by outsiders.

Chapter V: The Industrial Structure of Yerucham, Dimona and the Region. A detailed description of the plants in the communities and the region.

Chapter VI: The Suitability Model. Based on theoretical literature and the empirical data collected throughout this study a model is constructed which can help in evaluating the undergoing industrialization process as well as creating a planning tool for designing and implementing industrialization policies. This chapter consists of two parts:

1. The theoretical background for the model.
2. The model

Chapter VII: Analysis and Generalization of the Case Studies. This chapter analyzes the data collected by correlating the key events in the relevant period 1955-1980, with the model.

Chapter VIII: Conclusions and Recommendations. This chapter summarizes the study by concentrating on three major subjects:

1. The historical explanation of the development of the "island phenomenon" and its effects.
2. Policy implications to prevent similar situations and suggested solutions.
3. Subjects for further research.

CHAPTER I

ISRAEL--THE HISTORY OF THE POPULATION DISPERSAL POLICY, AND THE ESTABLISHMENT OF THE DEVELOPMENT TOWNS

Most of the world countries, regardless of their location, population structure and regime, are struggling in one way or another with policies affecting the spatial distribution of their population. Every public policy with some territorial component (from location of industrial plant to implementation of national health plan) means directing resources and affecting the physical structure of the nation, in a way whose impact cannot always be predicted.

The issues and problems connected with the physical-national policies are summarized under three headings: size, growth and decline (Alonso, 1972). The problems of size include: congestion, pollution, access to open land and social and psychological problems such as personal alienation. At the lower end of the scale of size there are the problems of lack of resources, lack of adaptability to change, a narrowed range of social and economic choices and increasing dependency. The problems of growth, as distinct from those of excessive size, include governmental cash-flow crisis in paying for additions to the

urban plant out of proporation to the existing population base; the disruption of traffic and land-use arising from the successive installation of new major urban elements, and the lose of such valued features as agricultural landscapes. There are also the problems of population decline, found in the central cities of metropolitan areas and in many smaller communities. They include the depreciation of existing capital stock and the welfare problems of a population which is increasingly composed of the old, the uneducated and the very young.

The instruments used for implementing the policy range from enforcing people to move to the areas with national priorities, through regulations and laws on the national and local level to economic incentives and the investment of resources in the developed areas. The extent to which these instruments are used depends upon the social, economic and political background of the country and the degree of government intervention.

Among the various available policies to attack these problems, population dispersal policy is considered to be the policy which has the strongest impact on the spatial distribution of the population in order to solve these problems. But various researches on popuation dispersal policies in developed countries have found that effective population dispersion has been achieved in countries like Sweden and France, which have explicit policies to disperse

the population, as well as in countries in which the governmental efforts have been minimal like Japan and the U.S.A. (Sundquist, 1975). In Britain, in which governmental policies are extensive, goals have been achieved to a lesser degree.

Population dispersal policy has various objectives; the central one is regional equality or bridging the gaps between regions. Other objectives are: national security, territorial presence, environmental protection and more.

In all cases it is believed that ". . . population distribution is the territorial aspect of a highly connected and interdependent social system, and that local variations in welfare and productivity are also aspects of this larger system reflected upon geogrphic space" (Alonso, 1972).

Consequently, economic and social problems are frequently attacked by territorial programs, i.e., changing settlement patterns, reducing the amount of immigration to urban centers, etc. Territorial policies, by their nature operate against the natural trends and dynamic processes of the various population groups.

Immigration processes, on the microlevel (the individual decision to migrate and the decision regarding the distination) and on the macro level (the significance of the location forces of "pull" and "push") are not well understood. Therefore, there are doubts whether any governmental policy will be able to affect the various

components of the system in the adequate way and at the proper time.

For many questions regarding regional policies in general and population dispersal in particular, there are not unequivocal answers (Hansen, 1976).

In the rest of this paper, a background to the population dispersal policies in Israel will be given. It will consist of four parts:

1. The origin of the policy
2. The justification of the policy
3. The implemention of the policy and the establishment of the development towns.
4. The results and the measurement of effectiveness of the policy.

1.1. The Origin of the Policy

Prior to the establishment of the State (1948) and extensively since then, Israel has implemented vigourously a policy of population dispersal.

The policy has been defined throughout this period as the policy which aims to achieve a balance in the spatial distribution of the population over the country's regions.

The justification for the policy and its objectives stem from a wide variety of considerations: ideological, political, social, economic and security, originated in the pre-statehood era.

1.1.1. The Pre-state Period

Settlement patterns in the Yishov--the Jewish community in pre-state Palestine--were determined by the waves of immigrants and Zionist ideology which accorded to land reclamation and Jewish manual labor a great significance (Akzin, 1966).

The origin of the population dispersal policy can be found in this pre-state period. The main reasons were:

1. Uneven use of the available land--intensive cultivation of the land in the central parts of the country.
2. Overcrowding in the three big cities (Tel-Aviv, Jerusalem and Haifa).
3. Introduction of a new concept to the security issue, namely, concentration of population by penetration to new regions rather than confining to a small area or quarter (as was practiced until the 1929 riots) (Reichman, 1979).

Population dispersal policy has never materialized in the pre-state period. In 1948, 70 percent of the population was urban and only 30 percent was rural, but the rural minority got the greatest attention, while the city--ideologically and functionally was regarded as unimportant (Cohen, 1970).

1.1.2. The Statehood Period

Following the establishment of the state in 1948, the situation has changed abruptly. In the first three years of statehood, an influx of hundreds of thousands of immigrants (fleeing, after the Second World War, from Europe and Arab countries) more than doubled the size of the population of the state. It was soon recognized by the government authorities that because of the different types of immigrants--"They came to Israel as refugees, not out of an ideological conviction which might sustain them while adopting to the harsh life of an agricultural laborer" (Spilerman and Haviv, 1976)--and the small capacity of the rural settlements, the latter will not be able to absorb this mass of immigration, and that residential quarters would have to be constructed to accommodate the immigrants.

Even at this stage, the "rural bias" was still strong among policy makers and public agencies. The rise in importance of planned urban absorption of immigrants was not accompanied by a change in outlook from rural to an urban colonizing or pioneering ideology. "The authorities did not turn their efforts to urban development out of their own free choice. This decision was forced upon them by the circumstances of immigration and settlements which emerged after the establishment of the state" (Cohen, 1970).

The slogan "dispersal of the population" has never gained the same ideological urgency and importance as, for

example, the slogan of "Mizug Galuyot" (Integration of the Diasporas) but it was nevertheless accepted as a public policy.

Contrary to the additude on the ideological level, the implementation of the policy has not encountered many difficulties. The immigrants were almost totally dependent on public agencies which used this dependency to try to alter the settlement pattern existing at that time. The implementation policy was accompanied by a development of a comprehensive population-dispersal plan. The novel part of the first plan was the establishment of new urban centers--the development towns. They were basically planned to serve as the missing middle links between the existing urban centers and the scattered villages. The newly established towns were planned to function as the regional service centers.

Over the last thirty years, the Ministry of Interior--which is responsible for the physical planning--has issued, every few years, eight plans stating the desired distribution of the population. The last one is aimed at the year 1992, when Israel will have five million inhabitants.

The plan specifies six major objectives, each connected to a different region. The specification reveals different justification for each objective. The justifications can be divided into five main groups:

geo-political, economic, ideological, social and ecological-environmental. More specifically:[1]

A. To increase the share of the population in the northern region (Gallil) and especially the share of its Jewish population.

This objective stems mainly from geo-political considerations. The northern part is the less developed region as a consequence of topographical and physical disadvantages. Being very hilly it prevented agricultural development and it lacks a strong urban center and industrial infrastructure. Therefore, this region has suffered from outmigration especially among the Jewish population. On the other hand, there has been a concentration of minorities in this region, and since their birth-rate is higher than the Jewish birth-rate they have become the majority in many locations.

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[1]The following three concepts should be clarified:

1. The goal of population dispersal--This is the goal which aims to achieve a more balanced spatial distribution.

2. Justification--The explanation behind each reason, i.e., economic, geo-political, ideological, social, etc.

3. Objective--The detailed goal or the practical implication of the goal on its regional level.

Security considerations, coupled with political calculations have put the objective of settling the Gallil among the top priorities for development.

B. To continue increasing the share of the population in the southern part (Negev), exploiting its development potential.

This objective stems from economic and territorial considerations.

The Negev area has natural resources which are not fully exploited yet, and empty land adequate for industrial development. The region has also several tourist attractions (medicinal springs, archeological sites) which are not fully developed. The forthcoming movement of the army forces back to the Negev may well be a stimulant to the development of this area.

C. Increasing the share of the population in the surrounding of Jerusalem and in the city--the capital of Israel. Encouraging the city as the spiritual and cultural center of the country.

This objective is motivated mainly by geo-political and ideological considerations.

D. Curtailing the rate of growth of the population along the central plain.

This objective stems mainly from economic and ecological considerations.

There seem to be diseconnomies to the scale of large urban areas which cause economic, social and environmental problems. Among them: expensive provision of transportation and sanitation services, higher rate of crime and air pollution.

E. Strengthening the "Development Towns" in order to prevent outmigration and to attract veterans and new immigrants.

Many of the development towns have been founded for the last thirty years in the less populated regions and have been initially settled by immigrants. Apart from the objective of territorial presence, the objectives of ethnic, social and economic integration were planned to be carried out in these towns.

F. Preserving the balance between the rural sector and the urban sector in light of the decrease in the share of employment in agriculture out of the total employment in the econnomy.

The rapid progress in the development of various sectors, relative to agriculture causes a concern regarding the future of the rural sector and the agricultural settlements. There are ideological motivations and economic considerations for the preservation of the agricultural land.

Israel has gone through various stages in implementing policies to disperse the population. Over

these stages, the priorities among the objectives and therefore priorities accorded to the respective regions have been changed.

Since the 1967 war, two new phenomena have emerged, which have a direct relevancy to the six objectives mentioned above:

1. The new settlements in the West Bank territories.
2. A comprehensive program to renew 160 urban neighborhoods all over the country. The lion's share of them are concentrated in the most populated urban centers.

These two programs are not an integral part of the goals of the Ministry of Interior's plan for 1992, but for the short and long run they compete with the other national objectives on limited capital and human resources.

1.2. The Justification of the Policy

The population dispersal goal was believed to be essential in the first nineteen years (until the Six-Day War) of statehood. It fulfilled various ideological objectives which the country has been committed to, and it seemed to serve adequately the necessities of a country in its infancy.

In the light of changing circumstances the validity of the goal of population dispersal is questioned. It is a crucial issue for further attempts to implement this policy.

While studying the issue of justification it is important to make a sharp distinction between the validity of the goal and the way it was implemented. The same goal can be implemented in various ways, some ways may be successful and some may fail to achieve the goal. There has been a tendency--which has gained support in the last decade--to reflect from a failure in the implemention process to the validity of the goal. For example, if there are several development towns which are lagging behind, maybe the goal of population dispersal should not be carried on.

Therefore, the following section will deal with the validity of the goal, while the next chapter will discuss implementation, and its results.

1.2.1. The Validity of the Goal

The validity of any goal, derived, at least theoretically from the justifications behind the policy. It is commonly accepted that in the case of the population dispersal policy, the justifications were based (at least until 1967) on a national consensus which was a result of a "modus vivendi" of various ideologies and points of views expressed by interest groups, political parties and other public bodies, as Hill states it:

> The planning has been extremely effective in meeting stated objectives as long as there was consensual agreement on objectives and there were no inherent contradictions between them--in that situation the pragmatic facet planning which has

> characterized so much of Israel's urban and regional development was very effective. (Hill, 1978)

The goal of population dispersal, at least in the official declarations and in governmental documents, since 1948 has never diminished in its importance (Zilberberg, 1973).

As much as it is for the consensus and lack of contradiction, it is for the wide range of justifications which support the goal, i.e., political, geographical, economic, security, environmental, etc. Whenever one of them diminishes in importance, there is another one to replace it in priority. For example, if the security reason is found to be less important as a result of changes in the balance of power in the region, the environmental issue of lessening overcrowding in the central parts of the country will justify further support of an unsuccessful border town.

The outcome of the existence of an umbrella of justifications is a validity continuously given to the goal and a change in priority given to the regions. Since population dispersal in each region is based on different justifications, whenever one justification becomes more important, the specific region will get more attention and resources. These changes in the priorities given to the regions, are not an outcome of changes in the declared policy, but rather an outcome of the policy implemented.

To sum up: in order to find out if the goal of population dispersal is still valid, one should not look for a single criteria to validate the goal, since there are several of them. Among politicians and policy makers there does not seem to be an attempt to find a single criteria or one justification, since it may involve ideological and political controversies. As a result, the validity issue focuses on the order of priorities among the various regions. The order of priorities is created by group pressures and circumstances.

In the next section two issues relevant to the justification for the policy will be raised:

1. The conflict between the goal of "population dispersal" and "the right of the individual to choose his place."
2. The conflict between the goal of "population dispersal" and other national goals.

1. The conflict between the goal and the "right to choose"

This issue is a part of the ideology behind any policy attempting to direct the population. It states the right of the individual to choose its residency, life style, his and his children's future against the legitimacy of the country to influence him to reside in a specific place.

Israel had implemented its policy of population dispersal mainly by directing new immigrants to the

preferred areas. Employment and housing were provided to them only in these areas. It turned out to be a delicate issue in the Israeli scene since the policy at its peak has been implemented by one specific group of the population--the immigrants from Asia-Africa countries rather than with a fair representation of the whole society.

Over the last ten years, the rate of immigration has considerably decreased, and there has been also a change in the socioeconomic and cultural background of the immigrants. Most of them have come from urban centers and therefore they preferred to settle in the central parts of the country rather than to go to peripheral regions.

The validity of the goal is questioned here in light of a violation of the right of the individual to choose. In a way it ties the validity of the goal to the mechanism of implementing it, since if nobody chooses to go to the peripheral regions, how will the goal be achieved? In other words, if the goal cannot be achieved, is it still valid? (This issue will be further discussed in the chapter on implementation.)

2. The conflict between national goals

The various objectives of the population dispersal policies in the world fall into the following categories: regional equality, efficiency, environmental goals, human well-being, territorial presence, ethnic integration, etc.

These objectives may have inherited conflicts in them. The goal of regional equality conflicts with national efficiency, the environmental goal conflicts with the efficiency objective, and the human well-being objective which calls for the provision of choices and for freedom to choose may conflict with the integration goal.

Inspite of what has been said so far, the validity of the goal of population dispersal can be questioned when the issue of the order of priorities of the national goals is questioned.

There is a threat to the priority of the goal, once it has to compete with other national goals. (In paragraph 1.1.2. a distinction was made between priorities under the same physical goal of population dispersal, while here the physical national goal is confronted with other national goals.)

The first time a threat like this has been created, was after the Six-day War (1967) when several events coincided to cause what seems to be a diminishing in the importance of the population dispersal goal. (Again, on the implementation level rather than on the declared one.) The events were:

1. Economic and industrial policies to increase economic independence. The changes in policies were the outcome of:

   a) a need to improve the balance of payments.

b) decrease in government intervention and decentralization trends.

c) a newly formed government (1977) with a "right wing" ideology, encouraging "free enterprises." The meaning of these policies was to maximize national efficiency--regardless of specific sectors and regions. In practice they may create regional and sectorial inequality.

d) The new settlements in the administered territories, competing on limited human and national resources.

All of these seemed to compete with the goal of population dispersal and the chances of the development towns to survive.

1.3. The implementation of the policy and the establishment of the development towns.

In 1951, Aria Sharon, the head of the planning department in the Prime Minister's office--which was then in charge of planning and development--issued a document which spelled out the foundations of the physical planning in the new state. While planning the implementation of the population dispersal policies for the future, the writer has concentrated on two situations which were supposed to facilitate the process of implementation. the first was governmental control over most of the land, and the second was mass migration.

At that time, 82 percent of the population resided in the metropolitan area, along the coast line, 11 percent in Jerusalem and only 7 percent settled in the Gallil and the rest of the country.

The first comprehensive plan for the new physical planning of the country was created by the National Planning Department-- a new unit established within the Ministry of Labor. The plan was based on the following principles (Reichman, 1975):

1. The basic concept is a region whose size is 300-500 km^2 with 50,000 residents. In each region, there will be several small villages, 1,000 residents each, two-three small urban centers of 6,000-7,000 residents and one major center of 20,000 residents.
2. The economic base of the large city will supply the needs of the city and the whole region.

There were two novelties in the plan: the hierarchical principle, and the establishment of several small towns located 10 km. apart from each other. Nevertheless, not much attention was given to the economic base of the small towns.

This geogrphical solution, fulfilled all the stated national objectives. The regional approach and the size of the region were supposed to fulfill the goal of reclaiming the land and ethnic integration, and the small towns were supposed to fulfill the security goal--control over land.

Over the years, the population dispersal policy has gone through various stages. A study by the Economic Planning Authority (Zilberberg, 1973) gives a detailed account of the policy by periods. These periods were determined according to their characteristics regarding population dispersal policies, and they are congruent with the waves of immigration.

1. First Period: (1948-1955): The years of mass immigration and rural settlement.
   The influx of immigrants in the late 1940s and the beginning of the 1950s was settled first in the arabic quarters of the big cities abandoned by their previous settlers. Later on the more remote evacuated small towns and abandoned villages were settled. The main contribution for the population dispersal goal came through the agricultural settlements which were spread all over the country. At that time, the development towns have begun to be build, but they did not have a considerable impact on the population dispersion.
2. Second Period: (1956-1960): Urbanization of Development Regions.
   The policy in the second part of the 1950s was based on a smaller wave of immigrants. This was the period in which the existing settlements (rural and urban) have been further developed. The Lachish region has

been settled. The Jewish urban population increased by 25 percent (300,000), and the development towns added to their residents another 100,000 (an increase of 80 percent). At that time, the urbanization of the development towns has followed the regional approach, namely, the development towns have been planned to serve as the urban centers for the rural settlements surrounding them.

3. Third Period: (1961-1965): Industrialization of development towns.

   From a quantitative point of view, there were only minor changes in the population dispersion. The share of the peripheral regions increased at a smaller rate--from 29 percent to 30.5 percent of the population. The only region in which the rate of increase was larger than the rate of increase of the population was the south which has absorbed approximately a quarter of the population increase.

   In these years, the industrial infrastructure of the development towns was founded. Eighty percent of the capital accumulated in the industrial sector by the end of this period (1965) originated in this period.

4. Fourth Period: (1966-1972): Freezing in the population dispersion.

The main reasons for the freezing were the economic recession and the lack of immigration. After the "Six Day War" (1967), although there were an economic tide and an increase in immigration, the priority given to the goal diminished and affected its implementation. (A more detailed analysis of the periods including the period 1972-1980 will be given in chapter VII.)

Over the years, various policies and mechanismms were implemented to achieve the quantitative goals of the population dispersal plans. They can be divided into two major types:

1. Incentives to encourage development of preferred areas and development towns. The incentives consisted of subsidies to the community and its infrastructure, e.g., provision of public housing, subsidizing the cost of land and physical infrastructure, establishing plants, implementing employment policies, provision of social services, etc., and personal incentives to the residents of these areas.
2. Restrictive measures to curb the growth in the central parts of the country.

Among the various policies and mechanisms which were introduced and implemented over the years, this study will concentrate on the industrialization policies and their results.

1.4. Results and evaluation of the policy.

Evaluating the results, and measuring the effectiveness of the policy to disperse the population are of great importance for a further successful implementation.

Measuring the effectiveness of the policy is difficult and complicated for several reasons: First, the process is long and therefore results can be evaluated only after a long period. Second, it is difficult to measure what could be happened without the policy, and third, there are simultaneusly, other implicit policies which have indirect effects on the spatial distribution of the population which are complicated to measure, and which may mask the effects of the explicit policy.

Most of the studies which evaluate the policy of population dispersal, concentrated on the measurement of the changes in the distribution of population over the country, using statistical and geo-statistical measures. They measured quantities, types, numbers of settlements, sizes of population, quantities of new jobs, volumes of subsidies, etc. Other methods used are:

1. Cost-benefit analysis--a method which compares the cost of the policy with the benefit and weighs the difference. The main weakness of this method is its inability to accunt for a wide array of qualitative aspects which cannot be quantified.

2. Comparison between goals and achievements--assuming that all the direct and indirect impacts can be captured, there does not exist any external criteria to determine the level of achievements.
3. Comparison among various instruments and mechanisms to achieve the goal--the main weakness lies in the hypothetical nature of the comparison, Moreover, it is difficult to capture the unintended consequences of the policies.

The main deficiency of most studies stems from the way criteria for evaluation have been constructed. In many cases it was solely the result of the availability of the data.

It seems that the evaluation of the population dispersal policies in Israel is deficient in all the mentioned above possible weaknesses. Beginning with lack of data through frequent changes in priorities to changes in policies. (A detailed analysis of studies conducted in Israel will be given in chapter II.)

The most comprehensive research which has been done so far, was conducted by the Economic Planning Authority (Zilberberg, 1973). The study evaluated the policy using two criteria: The relative demographic development of each region and the economic development in terms of investment, employment, sectorial structure, etc. The study did not deal with the social and welfare aspects: e.g., the extent

to which the policy has achieved national goals such as social integration, immigration absorption, etc. The study has concentrated on the comparison between goals and the achievements of the goals, and used simple statistical indices to express it. The main findings (for 1972) were:

1. Throughout the years, the various plans to disperse the population have been successively less ambitious regarding their objectives, i.e., in stating the objective of changing the share of the periphery compared to the share of the central parts of the country.
2. The population dispersal goals were not achieved. There were deviations to a greater degree in the northern part of the country, the Gallil, and to a lesser degree in the southern parts--the Negev, and Tel-Aviv and the metropolitan areas. The deviations from the original plan were in the rural sector as well as in the urban one.
3. The development towns have not grown according to the stated goals, especially the small urban centers which have not developed due to their small scale.

Another study (Shachar, 1971) found that between 1948 - 1967 the center of gravity of the population has moved to the south. This study showed also that there periods of freezing in the policy especially between the years 1963-1967--the economic recession period.

The main conclusions of these studies and others were:

1. A relative success in the southern part.
2. Failure to achieve goals in the northern part.
3. Some success in Jerusalem.
4. Failure to curb the growth in the central parts of country.

The development towns which were planned to be the principal mechanism to achieve a more balanced distribution of the population, have not fulfilled the expectations. Moreover, throughout the years, some of them have become sources of social and economic difficulties.

Among the various issues which can be evaluated, starting from the rate of success of the development towns in general, to the different policies and mechanisms in particular, this study will concentrate on the results of the industrialization policies and the methods suggested and used for the evaluation.

CHAPTER II

LITERATURE REVIEW

The issue of "the suitability of industries to non-metropolitan communities" in general, and in particular "the industrialization of development towns in Israel" touches a wide range of theoretical areas of study, as well as research and empirical analyses done all over the world and in Israel.

The multi-dimensionality of the subject expands from various sub-areas of the regional science - "the study of those social, economic, political and behavioral phenomena which have a spatial dimension" (Miernyk, 1976) through "selection of appropriate industries" methods to studies on the "development towns in Israel."

In the following chapter, the main theories relevant to this study will be briefly surveyed with a main emphasis on the weakness of the literature to deal with the issue at hand. (Theoretical and empirical studies which were used in this study are discussed in chapter 6.1.)

The study suggests - based on analysis of the industrialization process of two development towns - a normative way to analyze the industrialization process of non-metropolitan communities in a dynamic time perspective,

and an operational definition for "suitability" of industries to development towns. It is believed, that both, the community and the time factors are the most crucial components in achieving a successful industrialization process, and that most of the literature - the existing theoretical ones and the empirical ones - do not fully account for these factors.

This chapter is divided into two main sections. The first one analyzes several established theories, relevant to the study, among them: location theory, national and regional planning theories, appropriate technology for developing countries theories, and rural industrialization studies. The second section discusses research and studies conducted in Israel on the development towns in general and on the industrialization of these towns in particular.

2.1. General Theories and Studies

2.1.1. Industrial Location Theories

The location decisions of firms and households, and the merging of these industrial decisions into a pattern of urban and rural land uses and concentrations of activities is the domain of economic location theory.

Location theory is the oldest branch of regional economics. It is a well established field which has not been changed much over the last decade.

The early work on general location theory has been developed by Lösch (1954). One branch of it has emphasized the role of transport costs (Weber, 1929; Hoover, 1948), and another branch has developed the profit-maximizing locational model with variable costs and demand (Greenhut, 1965).

The main areas in which there has been significant development is the challenge to the profit-maximization principle and the prediction of locational determinacy.

Some researchers showed deviations from the formal models due to differences in information available, the occasional importance of personal factors in location decisions, the difficulty of controlling for risks and uncertainty, and the need to economize on time, information collection and other resources in choosing a site. Weber analyzed the rate of uncertainty in location and showed that it tended to reinforce agglomoration even in the absence of external economies (as in the case of developing countries).

Most of the studies of locational agglomoration have focused on the agglomoration of firms in the same industry, but a different approach was brought by Isard (Isard, 1956), who studied industrial complexes, i.e., firms in a group of industries connected by significant flows of goods and services. In the last decade, this area was studied extensively. Most of the studies have been preoccupied with different ways of measuring interindustry linkages and

little attention has been given to the more critical question of why and under what conditions agglomoration will take place.

Industrial location theories have variously considered raw material location, transportation costs and availability of labor to be the most important determinant of the specific location of a manufacturing enterprise (Alonso, 1968a). The classical "Location Theory" is based on the assumption that the firm tries to minimize transportation costs by minimizing distances to the various markets, including raw material, energy and the consumer's market.

In an elaboration of the theory, based on empirical studies - a new term of "foot-loose" industries was coined to describe those plants which were found to be indifferent to distance and transportation costs as the result of the nature of their product. A "foot-loose" industry, defined in a simple way as ". . . an industry is foot-loose if its long run profitibility is the same for any location in an economy" (Klaasen, 1967).

Most of the locational models, determined by distance and transportation were based on industrial-technological factors, while other factors like: social, demographic and economic characteristics of the location were ignored unless they had a direct connection to the industrial-technological structure.

Aside from the reservations regarding evaluating alternative locations only on the basis of costs (e.g., revenues might differ considerably between alternative locations on account of variations in the size and structure of the markets and in elasticities of demand), other factors which have an important role in the location decision but cannot always be quantified (certainly not always by measuring cost levels) were overlooked.

L. H. Klaasen has done the first step to substitute "transportation" with a wider concept of "communication" to include the economic, social and cultural distances as factors in estimating cost, in addition to the physical distance. In regard to the "foot-loose" industries, he claims:

> the most fruitful approach to the question [of "foot-loose" industries] is to consider all locational requirements, including those of a non-economic nature, and not to regard almost any industry as 'foot-loose' simply because differential transportation costs, for example, have become of negligible importance.

He suggests therefore to consider the hypothetical sum of transportation costs and communication costs for markets and supplies individually, and tries to discover how far these costs determine the location of the industries studied. Klaasen indicates three kinds of communication costs which are important for the producer: communication with other producers linked either forward or backward to the producer in question, communication with consumers and communications

with the local government. In a study supervised by Klaasen and other researchers, it was found that economic and social distance appears to be, on the average, ten times as important as physical distance, and this effect is more pronounced in the case of complex rather than in the case of simple raw materials plants.

In brief, Klaasen claims that the concept of "foot-loose" is relevant only so far as transportation costs are concerned, which means that factors other than transportation have become relatively more important, and that the industry is not at all footloose in a general sense.

Some other factors, like: policies set by the government or the importance of the quality of the labor force, are proofs for the superiority of the comprehensive definition of location rather than the narrower one set by the classical "Location Theory." The definition of "development areas" by the government while encouraging industrialization is based on various criteria including: national priorities, strategic importance, etc. While the traditional factors like distance disadvantages to location do not necessarily play a major role. Governmental policies, in their support for plants to locate in the development areas, do not differentiate between industries with locational advantages, and those which do not have them. Governmental support is given more on the basis of

the indirect effects of distance like: the size of the place - which has an effect on the availability of the auxiliary services, or the availability and the quality of the labor force.

The quality of the labor force has an effect on the operation of the plants and on the cost of labor. The true cost of labor is not measured by what the employer has to pay, but by what he gets for what he pays. Locations may vary in the quality of the labor force. They may differ in factors like: labor attitudes which are reflected most significantly in productivity, turnover and absenteeism. They differ in labor supply which has an effect on the organization of industrial undertakings which may be reflected in costs and they may differ in their need for special skills.

Governmental policies, management and especially the quality of the labor force, have been factors which determined, among other factors, the success or failure of the plants.

When "Location Theory" is used to understand the causes for the success or the failure of a plant, it is assumed that the rate of success depends upon the appropriate location. Nevertheless, there maybe some other causes, for example:

1. The selection of the product, and especailly its export market.

2. The labor force, its quality and quantity.
3. Government policies over the years to encourage industrialization of preferred areas.

All three sources of difficulties cannot be explained by the classical location theory. The extended theory (developed by Klaasen) can partially explain some of the above causes, because it takes into account the problems of the quality of the labor force, lack of auxiliary services and difficulties in communication stemming indirectly from the location, e.g., disadvantages stemming not necessarily from the distance but rather from the history and the development of the place. But apart from taking into account these factors, even the extended theory cannot explain the dynamic development of a situation, or the causes for its creation which is crucial for this study.

The theory can be of help for description but not for explaining the development and possible prediction of future perspective.

It should be noted that "Location Theory" was developed under the conditions of free economy, assuming unlimited managerial resources, full information, predictability of the future, and all other things being equal. These assumptions are unsuitable for countries in the initial stages of development. Planned economy and a massive intervention by the government would be a more appropppriate and relevant background for the proposed

analysis of the policy to industrialize the development towns. The optimization function of this policy includes national goals and various priority considerations which the "Location Theory" does not deal with. Nevertheless, "Location Theory" may help in the following subject:

"Location theory" represents the logic behind the decision of an entrepreneur where to locate its plant, and hence enables evaluating his decision to locate in a non-metropolitan community like the development town. The logic of location theory may be used to examine a partial aspect of the "suitability" issue: the efficiency of the locational decisions, taking into accunt transportation costs, raw material location, agglomoration factors and the existing mixture of industries, availability of physical infrastructure, labor supply and some other locational factors.

The "efficiency" criteria of "Location Theory" may be sometimes adopted by the government when trying to optimize location of new industries or to provide subsidies to the more efficient industrial plants.

Since the entrepreneur's decision to locate his enterprise in an underdeveloped area may be - from the point of view of the "Location Theory" - economically inefficient to him, the government steps in with compensations in the form of economic incentives. However, the government's objectives are different from those of the entrepreneur and

thus the matching between industries and locations in the context of government intervention should utilize a broader notion of suitability.

One of the important issues is identifying the additional criteria the government should apply in the process to create a broader definition of "suitability." The theories of national and regional planning, and the literature on "appropriate technologies for developing areas" may give some clues.

2.1.2. National and Regional Planning Theories

In contrast to the location theory model, in which location of an industry is considered as a profit-making venture by a private enterprise, in the evolving area of national and regional planning, the issue of the location of an industry is being considered as a "project" by a government agency (Alonso, 1968b). In these cases, the government is interested in the costs and benefits occurring outside the industry. Regional planning is concerned with the external effects within the region, and national planning with the effects among regions.

The field of regional planning covers normatively oriented or policy studies. These take their cue from the problematics of planning practice and attempt to put potential interventions in ongoing spatial processes on a "rational" basis. Five major policy issues have been

investigated: the question of optimum city size and size of hierarchies, national urban growth policies, growth center policies, location policy and subnational policies for full employment. The fourth subject - "location policy" - is the most relevant one for this study.

The main issue discussed in the subarea of location policy is: "How should governments decide on the question of where to encourage industrial development?" The literature on regional growth theories - the idea that scarce resources would yield larger economic benefit when applied to a limited number of centers having a high potential of economic growth - provides some knowledge that may facilitate governmental choice in this matter.

There are two groups of ideas under the heading of "regional growth theory." The first one deals with "structure and growth of urban systems," while the second can be described as dealing with "polarized development."

The first subject deals with hierarchical systems of cities and the statistical laws attached to their growth. It asks the following sample of questions:

- What is the relation between a country's level of urbanization and the percentage of its labor force in manufacturing industry?
- Under what conditions does primacy arise in the size distribution of urban population size?

- What consequences does an accelerated rate of urban growth have for social, economic and political changes within a given country?

These studies deal with the national level and with the country as a whole, and from this perspective it may not be helpful for a study which is concerned with the local level or the regional level at the most. But since it deals with stages of development it may help in understanding the stages of development, both for the country and for the specific community, necessary for studying trajectories of industries and suitability of industries over the community's stages of development.

The second subject - "polarized development" - deals with the theory about the role of power relations in spatial development. Originally it was formulated as a nonspatial economic theory that provided an elaborate rationale for the concentration of economic powers in a few technologically advanced industries tied into the rest of the economy through an elaborate system of input-output linkages. It was soon "translated" into spatial terms. Richardson (1973) developed a model of regional growth that emphasized the role of agglomoration economics, locational preferences and locational constraints. Regional agglomoration economics play a critical multiple role: they promote technical progress and higher productivity, they attract industry and capital, they influence migration decisions and they affect

the efficiency of the intraregional spatial structure. Locational preferences help to explain why investment subsidies may fail to persuade firms to relocate away from core regions and why many households do not necessarily move in response to income and welfare differences.

Understanding polarized development and the different forces affecting the spatial distribution of social and economic activities is crucial for designing any effective regional policy. Empirical studies in this subarea like the one by Henderson (1981) on the location of immigrant industry withinn a U.K. assisted areas, or by Carlton (1979), are helpful in clarifying why some firms are attracted to a specific area while some are not, or why some stay and some leave.

Except for the literature on growth centers and poles, relatively little work has been done that would facilitate governmental choice on the issue of where to encourage industrial development.

No theory, for example, addresses itself to the dilemma of the policy maker or planner who must find a path between efficiency and equity issues in allocating resources to industrial development in particular locations, or who may be asked to select viable industries for promotion in economically backward and declining regions. Both questions have been addressed to some extent in the literature, the first by Alonso (1968b) and the second by Klaasen (1967).

The definition of suitable industry in the regional and national planning literature is: the industry which has the highest potential to achieve national or regional goals (increasing export, equalizing regional income, promotion of industrial production, etc.) under some locational constraints.

The theory does not deal specifically with the socioeconomic characteristics of the community to be industrialized, nor does it consider local policies. In this regard, this study goes one step beyond the regional theories. Nevertheless, it explores policies and methods designed to achieve regional goals in order to find out if they can be modified and used to achieve local ones.

In addition, the following issue is examined: to what extent policies designed to benefit the region may benefit the local communities in the region? And to what extent policies towards regional or national goals may conflict with policies towrds local objectives?

2.1.3. Appropriate Technologies for Developing Countries

This topic has tended to concentrate on the factors thought to be important in promoting national or regional growth, in Less Developed Countries (LDC). The traditional theories have emphasized the predicted consequences of the non-metropolitan industrialization processes which might have generated in the national and regional level.

In his book "Appropriate Technologies for Developing Countries," Eckaus argues that the only standard of "appropriateness" of technological decisions is in reference to the general goal of development (Eckhaus, 1977). This approach to appropriate technologies has been criticized on the ground that he does not consider the adequacy of the technology to specific factor endowments, informal restrictions and other institutional aspects of LDC.

A different perspective which examines the adequacy of the technology to factors -- not mentioned by Eckaus -- states the following issues:[1]

1. Can the support mechaniism and organizational arrangements which go with the technology in one country be adopted to fit a new situation in a different place?
2. An issue which deals with the non-material resource requirements of any technology: for example the question whether a technology developed with a hierarchical organizational arrangement in mind can be suitable for an area in which work has traditionally been organized along collective or cooperative lines.
3. Issue which has gained attention only recently, but has not been dealt with yet, is the less tangible basic needs, like: self fulfillment, participation,

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[1]Based on an article by Mary B. Anderson, 1979a.

quality of access to knowledge, etc., which have not been included among other measures of appropriateness in the process of applying technologies to meet human needs.

In a paper "Rural Development through Self-Reliance," Anderson (1979b) suggested a framework for assessing appropriateness of technologies. This framework helps to answer the question: "To what set of circumstances should an appropriate or modern technology be responsive?" The answer:

1. In terms of the resources which a technology uses - Resource Appropriateness.
2. In terms of the degree to which it helps meet identified needs - Needs Appropriateness.
3. In terms of the extent to which it supports the achievement of longer term social and economic goals - Goals Appropriateness.

The author concludes:

> In resource terms, suitable technologies . . . should be designed to be responsive to local organizational and cultural styles, the non-material resources. Basic needs would be defined, initially in local terms.

Anderson relates to two important factors in defining suitable industries: the importance of selecting industries which will use appropriately the local resources, and the significance of the needs of the local level while contemplating industrialization.

Following similar considerations Klaasen (1967) develops methods of selecting industries for depressed areas. The method is based on considering simultaneously both the structure of the area and that of a given industry. The method tries also to incorporate growth rate of an industry into the method.

> This is done to emphasize that the present location factors will change and draw attention to the fact that long-term forecasting in this field would contribute greatly to the achievement of more rational location decisions in the present. (Klaasen, 1967)

This body of literature dealing with "Appropriate Technologies for Developing Countries" seems to be the most relevant one to this study, with some modifications. In spite of the fact that some of its versions have the same weaknesses as the previous body of literature has (Regional and National Planning) of stating national and regional objectives as goals rather than local ones, it considers more seriously (especially in the last two examples) the social and economic background of the community, and inquires into the issue of fulfilling material and non-material needs. (A detailed analysis of the specific characteristics of the suitable industries is given in chapter 6.1.)

2.1.4. Rural Industrialization

The closest body of literature which addresses itself to the issue of non-metropolitan communities, is the literature on rural industrialization.

Industrialization of rural areas has been, for the last twenty years the main answer to the problem faced by many communities, this of the higher demand for employment in rural areas than the supply which can be provided by agriculture. The high demand is a result of high rates of natural population growth in rural areas, as well as of a trend of population flow from the big cities to rural areas and small towns (mainly in more developed countries). This high demand may be also enhanced by a national policy of population dispersion. The quantity of employment supplied by agriculture is restricted by the increasing technological level of production, in many cases due to limited resources of land and water. Besides the quantitative limitations, the supply of agricultural employment suffers often from qualitative deficiencies, such as low levels of income and insufficient diversity of jobs in relation to the needs of younger and more educated labor force. Beyond the problem of low income levels, in many countries the existing agrarian structures lead to an extreme inequality in the distribution of income (Bar-El, 1983).

In many aspects, the causes and results for rural industrialization resemble the industrialization process in

the non-metropolitan communities in general and in the development towns in particular. For example, both face problems of distance and remoteness--being far away from metropolitan industrial centers, both operate usually on a small scale due to the sparsely populated areas which characterize the rural and the non-metropolitan areas, both supply employment in areas in which agriculture cannot supply enough employment (this was the initial objective of the industrial plants in the development towns--see chapter I), and both suffer from qualitative deficiencies, i.e., low levels of income, insufficient diversity of jobs, etc. Nevertheless, there are major characteristics which differ between the two and therefore, make the literature on rural industrialization less suitable as a background for this study. The most important feature is the point of departure. The rural industrialization sees the employment in the agricultural sector as the most important sector, while the industrial employment is the residual. This does not imply only that industrial employment gets less priority, but mainly that the rural labor force is treated differently in the industrialization process since it has a "past" in agricultural employment, i.e., work ethics, work experience and especially the existence of supportive agricultural organizations and social structures (see Weitz, 1979). On the other hand, the labor force in industrial non-metropolitan communities, suffer usually from inadequate work experience and lack of supportive social organizations.

The second important difference is that most of the literature on rural development deals with countries in the very initial stages of development, compared to Israel which is considered to be in a more advanced stage of development. This implies that the objectives of rural industrialization in less developed countries, as well as the quality of the labor force and its expectations differ considerably from those in Israel. In spite of the fact that Israel has a wide spectrum of population groups, differing in their socioeconomic background and the quality of their labor force and expectation--which is the main cause for the creation of the "island phenomenon" (see chapter IV)--nevertheless, the majority of the groups are more developed compared to the situation in the developing countries.

A lion's share of the literature on industrialization in developing countries discusses how to provide the minimal necessities for the settlers in the rural areas, i.e., food, clothing, etc. While in the Israeli reality, the objectives of rural industrialization have objectives for higher standard of living for the communities in the development areas.

On the industrial side, most of the industries suggested for rural industrialization manufacture goods for local demand, i.e., consumer products, agricultural machinery, etc. While in Israel due to the small size of

the rural population the whole country is the market, as well as manufacturing for export.

Nevertheless, in spite of the many differences, several works (Don, 1977; Bar-El, 1980) have helped in formulating the suitability model (see chapter VI).

2.2. The Literature on the Industrialization of the Israeli Development Towns

The lion's share of the research and the studies dealing with the Israeli development towns in general was conducted in the late 1960s and the beginning of the 1970s. Studies dealing specifically with the industrialization of the towns have been conducted in later years, towards the end of the 1970s.

The studies and the research can be divided into several groups, according to the discipline in which they were done. The disciplines are: sociology, geography, economics and planning.

a. Sociology

Sociological research on the development towns was conducted mainly either by the research units of several governmental ministries, i.e., the welfare ministry, the housing ministry and the ministry of labor, or in the academic institutions. Most of the studies concentrated around the issues of immigration absorption and ethnic integration (Lissak, 1964; Eisenstadt et al., 1967; Eisenstadt, 1970; Peres, 1976; Cohen, 1979; Cohen, 1983). The studies did not restrict themselves to the development towns, although due to the uniqueness and remoteness of the towns the towns have been used as case studies (Shuval, 1959; Zamir, 1959; Soen, 1960; Abeles, 1960; Cohen, 1964; Cohen, 1969; Cohen, 1970). The studies have concentrated on

the social, ethnic and educational side of the communities and on the various social groups. They have emphasized social and political processes, especially the works by Cohen (Cohen, 1970a, 1970b), who studied issues like the "dependency of the development towns." None of these studies has incorporated economic or employment issues.

The Israeli sociological literature was used in this study to describe the social aspects of the "island phenomenon" (see chapter 4.1) as well as in the analytical chapter (chapter VIII).

b. Geography

The studies conducted by urban geographers are descriptive, using geo-statistical indices to describe population movements, changes in the population distribution, etc. without qualitative characteristics of the results of the processes.

In his article "Israel's Development Towns: Evaluation of National Urbanization Policy," Shachar (1970) has applied geo-statistical techniques for measuring changes in the spatial distribution of the population. He has found a gradual spatial shift of the Israeli population towards the south, and has concluded that the development towns were the main agent in changing the settlement pattern under the national urbanization policy. Nevertheless, this success has been accompanied by a failure to achieve regional integration.

In later years, and for the last decade, several urban geographers were among the first ones to begin studying the industrial structure of the development towns. Gradus et al. (Gradus and Karkover, 1976; Gradus and Einy, 1980) have studied extensively the level of industrialization and its characteristics in the central and developing towns, as well as the changing spatial structure of manufacturing in Israel. Their work was the first one to describe the laggard industrial situation in the developing areas.

The main weaknesses of this type of studies are: 1) The studies use quantitative measures like number of employees to describe the level of industrialization while the qualitative characteristics of the available jobs and their impact on the labor force and the community are neglected. Quantitative measures by themselves may mislead. Does an increase in the number of employed persons mean an increase in the level of industrialization? To what extent do capital-intensive industries which employ less people contribute to the increase in the level of industrialization? What is happening to the level of industrialization when industrial plant replaces boring and monotonous jobs with robots and more advanced technologies? 2) The studies were conducted on the regional level rather than on the local one. A region may include other types of industrialized communities as well as regional plants (like

the chemical plants in the case of Yerucham and Dimona) which may mask the real industrial situation in the towns. 3) The studies were done on an aggregate level, diversification of the industrial structure was evaluated on the regional level rather than looking into the extent to which the jobs are diversified in each plant, the whole region was defined as "advanced" or "laggard" rather than each plant.

Another group of studies were conducted by Kipnis (1976, 1977). His studies, as the studies of other geographers, deal with indices and descriptions. The major indication used is the number of employees--the size of the plant. The main finding of his study is: "Medium size manufacturing plants, achieving increasing scale economies by a disintegrated production process within the urban economy, are more favorable for urban growth than larger plants" (Kipnis, 1976). The disadvantages of these studies are: 1) When evaluating the optimal size of a plant to achieve urban growth, the stage of development the town is at is not considered at all. The study surveyed 150 plants in several development towns without differentiating among the various towns according to their history, size, function, etc. The study failed to distinguish between the different locational, economic and social characteristics of the various communities. The development towns have been treated as if they formed a homogeneous settlement category

with regard to the various qualifications. Moreover, no connejction has been made between the plants and the locality. 2) The study does not differentiate between the various types of plants and their characteristics.

In brief, the geographical studies are descriptive, emphasizing usually one aspect of the industrialization process--usually the one that has a spatial dimension. The studies are done on an aggregate level, which may help in making generalized conclusions but may be biased. They are less helpful for planning purposes.

c. Economics

Only a few studies were done by economists, and they have concentrated on the effects of the government incentives on the dispersion of the industrial plants (Ben-Bassat, 1974; Berkowitz et al., 1970).

One of the most comprehensive studies was done in 1973 by the Economic Planning Authority (a unit in the Treasury) to evaluate the dispersion of the population in Israel between the years 1948-1972 (Zilberberg, 1973). It is a descriptive study on the regional level which analyzes the dispersion of the government investments in various sectors and accordingly, the changes in the dispersion of the population over several sub-periods. This material was used as background for chapter VII--"Analysis of the Case Studies."

Some researchers have collaborated with sociologists to study migration and mobility issues in the development towns (Don and Hovav, 1971; Kirschenbaum and Comey, 1973). In the study by Kirschenbaum and Comey, the main factors attracting new immigrants to the development towns were studied. Among the ten factors, employment and unemployment (measured by the ratio of the employed and unemployed per 1000 in the labor force) were considered. Bar-El (1980, 1981, 1983) has studied the issue of industrialization in Israel in general and in the rural areas in particular. His studies--although used as background material for this study--were done on an aggregate level (regions) which is too general for the purpose of this study. Bar-El and Don (1972) have studied one aspect of "suitability"--the sensitivity of plants in several development towns to the recession (1965-1967).

None of the studies conducted by economists has dealt with the issue of the success and failure of the industrial plants in non-metropolitan areas, nor with the suitability issue--connecting the community to the industry.

One study, conducted by an economist and social scientist is exceptional in this sense. The study, "Development Towns in Israel: The Role of Community in Creating Ethnic Disparities in Labor Force Characteristics" (Spilerman and Habib, 1976), tries to connect the industrial structure of the communities and their social, economic and demographic characteristics.

By relating the occupational composition of the development towns to the demographic features of their residents, they have found how the development towns have patterned the industrial affiliation of the immigrant groups and influenced their consequent occupational distributions. "We conclude that the overrepresentation of Asia-African ethnics in the development towns (which contain industries different from those common elsewhere in the country) and their further concentration in certain of these settlements, has served to expose them, to a severe disproportionate extent, to particular industrial opportunities" (ibid., p. 798).

The authors give also some explanation for the development of this situation:

> While the skill levels of the inhabitants may have been influential as initial cause in attracting certain kinds of enterprises, once an industrial base has been established the occupational structure of a settlement is an immediate resultant of its mix of industries. (Ibid., p. 801)

This study describes actually the beginning of the "island phenomenon" (see chapter IV), and how it has evolved. Nevertheless, it does not explain why the phenomenon has continued to exist and was reinforced. This is mainly because of several weaknesses: 1) The time range between the development of the phenomenon and the study was too short (the study is based on data from 1961). 2) The study does not look into the industrial side of the

phenomenon and the "behavior" of the industrial plants. 3) The study does not differentiate between types of communities and plants. Nevertheless, it gives a real and accurate picture of the initial stages of the "island phenomenon."

d. Planning

The planning discipline is the closest discipline to this study. Not many studies have been conducted by planners, and only few studies have contributed to this research.

Most of the major works by planners were conducted in the late 1960s and beginning of the 1970s (Spiegel, 1966; Berler, 1970; Brutzkus, 1970; Lichfield, 1971), and this accounts also for their main disadvantage because of the following reasons: First, they lack time perspective. The industrialization of the development towns had taken place by the late 1950s, and was at its peak in the 1960s. While these studies were conducted most of the newly established industrial plants were still in their infancy, enjoying massive support from the government, and therefore it was difficult to evaluate their performance, viability and impact on the community after such a short time. Second, most of these studies were conducted in a period of economic growth and prosperity in the whole country (after the "Six Day War" and the recession period) which has benefited also

the development towns. This was quite a brief period which cannot be considered as a typical and representative one. It introduced therefore a bias to the analysis of the real situation in the development towns. (For more details, see chapter VII.)

More specifically, the work by Spiegel gives a comprehensive view on the development towns, nevertheless, it was conducted in 1965, and could not evaluate the situation from an adequate time perspective. In the work by Berler there is one chapter on industrialization. The indicators used to evaluate the level of industrialization are: the number of employees, the size of the plants and initial governmental investments. These indicators give only a partial view of the real situation. The most comprehensive work till now was done by Lichfield et al. This work, commissioned by the Ministry of Housing, was conducted as well by the beginning of the 1970s. The main weaknesses of the work are: 1) The study analyzes the situation in the development towns by sectors: community, industry, employment without trying to connect between the sectors and to show the interrelationships. 2) The work is quite general, analyzing all the development towns without making distinctions in regard to their history, location, population, relative advantages, etc. 3) The employment in the industrial sector is considered to be as a residual to employment in other sectors. 4) Level of industrialization is measured by number of employees.

None of the works done by planners or in the planning area has studied thoroughly the industrialization of the development towns issue.

Another group of studies which has been given special attention is the group of studies conducted in Israel on the rural industrialization of two unique types of communities: the Kibbutz and the Moshav (cooperative villages).

These two types of communities based on agriculture have been undergoing for the last decade a process of industrialization due to the inability of agriculture alone to support the communities. Because of their unique social and ideological backgrounds, the process of finding and adopting "suitable" industries has been done very carefully, expecially in the case of the Kibbutz's industry. The Kibbutz's industry is confined, among other things, by restrictions on hiring outside labor and has therefore to match carefully the existing and available labor force and the specific requirements of the proposed industrial plant.

Many of the industrial plants in the Kibbutzim, were found to be successful. The process of industrialization in the Moshav is still in an initial stage and therefore it is difficult to evaluate it.

The literature on the Kibbutz' industry was written either by economists (Barkai, 1974) or by sociologists and

organizational psychologists (Ben-Dor et al., 1976; Rosner, 1978; Golomb, 1980), who studied the "Quality of Working Life" (QWL) in the industrial plants since Kibbutz puts the human factor as the most important factor when contemplating industrialization.

The main work on the Moshav industry was done by Don (Don et al., 1977). The work presents a theoretical comprehensive model for the industrialization of the Moshav. This work has helped in formulating the main factors contnributing to the definition of "suitability."

Since the industrialization in the Moshav is still in its initial stage, there are not many empirical studies on the process. A work by Bar-El (1983) studied the rural labor-force supply for nonfarm employment and pointed to the difficulties of the unemployed to find suitable jobs in the industrial and service sectors. The work deals with the social and community aspects while it does not analyze the industrial areas.

The Kibbutz and the Moshav share with the developments towns problems of remoteness and small size regarding industrialization. Nevertheless, being rural communities, based mainly on agriculture, coupled with the social and ideological constraints make their experience less suitable for comparison.

For the last few years a great volume of studies and research were done as part of the urban renewal project

which planned to include some 160 deteriorating neighborhoods in the big cities and in some of the development towns. Only few of these studies considered employment and industrial plants as part of the renewal programs (Karsel, 1980).

Summary

The main disadvantage of the literature, both the general one and the Israeli is in its inability to deal with dynamic processes, i.e., with phenomena which have been evolved gradually as a result of several other processes. Most of the theories are "static" describing situations in a specific time. In the case of the Israeli studies, the problem stems from lack of time perspective and from evaluation studies which were conducted too close to the time that events actually occur.

The second disadvantage is in the sectoral nature of the theories and studies, i.e., they relate to one component of the whole system, either the industry, or the economy, or the society, or the government policy. Only few theories and studies try to look into the interrelationships between two or more components in the system like the "suitability" issue. Since the roots of the problem analyzed in this study are found in the development of these relationships--the problem of "unsuitability" and its effects, the gap in the literature makes it less adequate to analyze the issue presented in this study.

Nevertheless, the studies and the theories from the broad spectrum of subjects have helped in the descriptive parts of this study (chapters III and IV), the theoretical part (chapter VI), as well as in the analytical part (chapters VII and VIII).

CHAPTER III

THE SOCIOECONOMIC DEVELOPMENT OF YERUCHAM AND DIMONA

Yerucham and Dimona, both towns were established in the period in which mass migration was directed mainly to rural areas and development towns (1948-1955). Yerucham was established somewhat at the beginning of the period (1951) and Dimona towards the end (1955).[1]

Yerucham was one of the first development towns established in the South, after few years in which development towns were set-up mainly in the central and the Northern districts. The town was established 35 km. southeast of Beer-Sheva (see Map 3.1).

It is not quite clear today, what the considerations were for selecting the town's exact location. Apparently it was thought that quarrying in the nearby Great Crater, together with small farms to supplement the resident's incomes, would provide an economic base for the community (Ben-Gurion University, 1980).

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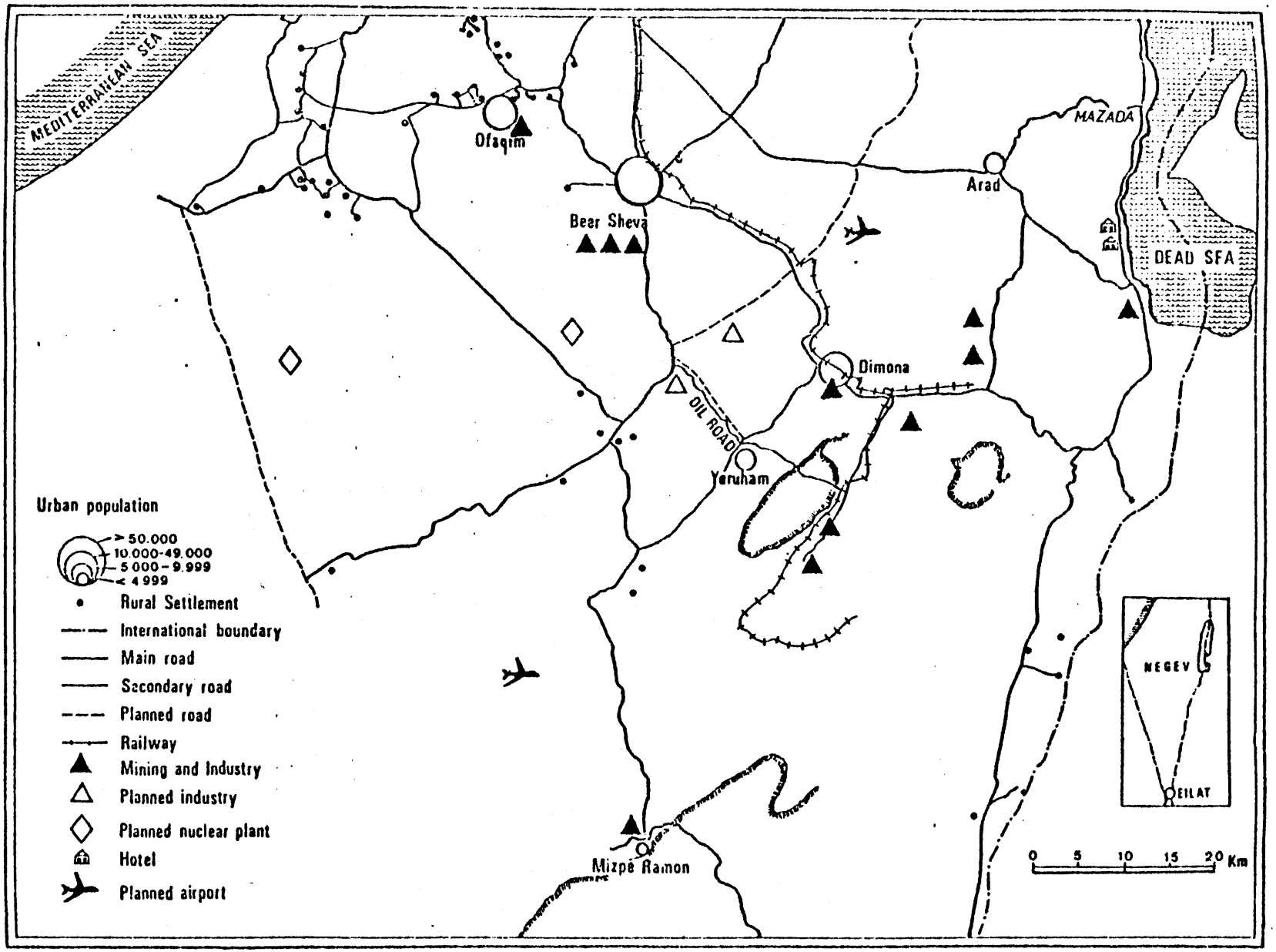
[1]This chapter is based mainly on Amiran and Shachar (1964), Ben-Gurion University(1980), Dror (1982), Friedman (1980), Smith (1972, 1974, 1975), T.H.L. (1980).

MAP 3.1 : YERUCHAM, DIMONA AND THE REGION.



Despite the fact that Yerucham was the first town in the region, its development, from the start, was extremely slow. Towns established later profited from the development of the region, while Yerucham lagged far behind them.

Dimona is the name of one of the towns which were established in ancient times along one of the most important roads in the Northeastern region of the Negev. The road which connects Beer-Sheva and the northern part of Arava Valley (see Map 3.1).

The establishment of Dimona and its location is associated to a greater extent with the renewal of the chemical plants in the Dead Sea and the Sodom areas. Under the regime of the British Mandate, the workers in these plants used to live in nearby camps, while their families have stayed in the big cities of Tel-Aviv and Jerusalem. The workers used to join their families every few weeks. The main reason for this arrangement was the harsh climate conditions in the area which have prevented the families from establishing themselves in the region. This separation has created a lot of problems for the families and for the workers in the camps.

After the Independence War (1948), the Israeli government decided to establish a town within commuting distance from the plants. It was argued that workers who live close to their families would create a better and more efficient body of workers. Another factor which had an

impact on the decision to establish the town was the erection of the phosphates plants in Oron.

All the above considerations were taken into account when Dimona was established on the 35th km. on the road leading from Beer-Sheva to Sodom (45 km. from Sodom). The traveling time is approximately forty-five minutes from Sodom and twenty-five minutes from Oron. Another advantage of this location was its proximity to a significant crossroad from where the main roads to Sodom and Eilat diverged, passing through Yerucham and Mitzpe Ramon.

Unfortunately, Yerucham, the then four year old town, was completely disregarded in the planning process. Moreover, later in the 1960s, a new road to Eilat was paved, leaving Yerucham and Mitzpe-Ramon off the main road, which had economic and social effects on the town (see chapter 4.3 on the "Subjective perception of the 'island phenomenon'").

Both town's climate is extremely dry, which weakens the influence of the high temperatures in daytime. Dimona was located in a way which enables winds to enter and to ventilate the air, although it also causes strong sandstorms.

Inspite of their close physical proximity, the towns have led very different courses of development. While Dimona was considered to be one of the most successful industrial towns in the 1970s, Yerucham has always been an example of an unsuccessful town. Nevertheless, for the last

few years both have experienced similar difficulties and problems stemming from their industrial character. This chapter, and chapters IV and V, will describe the situation.

3.1. Population

By 1980, there were approximately 6250 residents in Yerucham, 50 more than in 1979. This rate of growth, although quite slow (0.8 percent yearly) may indicate the beginning of a process of population growth, after several years of decrease in population growth compared to the national averages.

The trajectory of population growth in Dimona was different. After overcoming the first several problems and difficulties in the initial stages of development, the town has grown rapidly. The rate of growth outpaced the rate of growth in most other development towns. (Between the years 1962-1963 it was double the average rate of growth in other towns.) Until 1976 Dimona was outstanding in the stability of its population, only a few residents have emigrated.

A closer look into the three sources of population growth will highlight the process of development in the two towns. The three sources are:

a. Natural growth

b. Immigration (Aliya)

c. Internal migration

TABLE 3.1

The Population of Yerucham, 1961-1980

Year	No. of Residents	Annual Rate of Growth (%)
1961	1570	-
1962	2630	67.6
1963	4000	52.1
1964	4500	12.5
1965	4610	2.4
1966	4700	2.0
1967	4750	1.1
1968	4940	4.0
1969	5050	2.2
1970	5400	7.0
1971	5650	4.0
1972	5800	2.6
1973	6200	6.9
1974	6300	1.6
1975	6450	2.3
1978	6150	-4.9
1979	6200	0.8
1980	6250	0.8

Source: Friedman, 1980, p. 29.

TABLE 3.2

THE POPULATION OF DIMONA, 1955-1981

Year	No. of Residents	Annual Rate of Growth (%)
1955	311	
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.		
1961	7,400	
.		
.		
.		
1967	19,000	0.5
1968	20,300	6.8
1969	21,600	6.4
1970	22,500	4.2
1971	23,200	3.1
1972	23,700	2.2
1973	26,300	10.9
1974	27,100	3.0
1975	27,400	1.1
1976	27,600	0.7
1977	27,400	-0.7
1978	27,300	-0.4
1979	27,800	1.8
1980	28,000	0.7
10/1981	28,300	1.1

Source: C.B.S., Municipalities in Israel, 1975, 1976.

a. The Natural Growth

The natural growth has been an important component of the population growth of both towns. Dimona's natural growth at the initial stages was double that of the country's natural growth. Between the years 1964-1966, it was 1.6 percent in Israel and 3.3 percent to 3.5 percent in Dimona. In other development towns, the average natural growth between the years 1961-1974 was 2.56 percent. Over the years, the rate decreased to 2.8 percent in 1976 and 1.9 percent in 1980. In Yerucham the natural growth has declined to the rate of 2 percent (1977-1978), which is lower than the average rate in other development towns--2.5 percent. Despite the fact that the rate of birth in the town is relatively high, the main reason for the decrease in natural growth is the negative balance of emigration, especially among the young generation (more than 50 percent are discharged soldiers and young couples), who are in the "childbearing" years. There are some fluctuations in the natural growth rates in Yerucham, and therefore, the trend is not clear.

The situation is similar in Dimona, but on a larger scale. Since the beginning of the 1970s, the natural growth has been the main source of population growth of the town. Since 1974 it has balanced the negative migration and has prevented a negative balance of migration. For the last few years the population has grown altogether by 1.4 percent.

A closer look into the birth rate in Dimona shows a great decrease in the number of newborn--a 15 percent decrease, while the national average has decreased by only 3 percent. Similar to the case of Yerucham, this can be explained by the emigration of young families (55 percent of the people who have emigrated).

In 1976 there was a decrease of 1.7 percent in the birth rate, while in 1980 there was an increase of 9.4 percent. It is therefore, difficult to indicate a clear trend, but if the decrease in the rate of birth is connected to the emigration of youngsters and young couples from the town, the town will face a severe problem of a negative migration balance.

b. Immigration (Alyah)

Until 1962 the main source of growth in both towns was immigration from foreign countries. The newcomers were transferred directly from the ships to the towns by the Jewish Agency. Each wave of immigrants has its share in the towns. Between the years 1955-1970, on the average, some 2.2 percent of the immigrants were sent each year to Dimona.

By the end of the 1960s, the rate of immigration slowed down, and by the beginning of the 1970s it almost stopped. Since then, it has ceased to play a major role in the population growth. Nevertheless, in the case of Dimona, several hundreds of immigrants have been successfully

absorbed each year over the last few years. In the case of Yerucham, the call of of the policy to direct new immigrants to the town is a result of a recent failure in which thirty families from Russia, which had been directed to the town, were not successfully absorbed and have left.

c. Internal Migration

For the last ten years the balance of migration of Yerucham has been negative. The problems with the migration balance are due to the high rate of emigration (63 people per 1000 leave compared to a national average of 40 per 1000), while the rate of immigration is only somewhat lower than the national average (35 per 1000 in Yerucham, and 40 per 1000 in the whole country).

The main problem with the high rate of emigration is the large percentage of the young generation which leaves the town (40 percent of those who leave are in the age group 15-29), and the high percentage of those who come from Europe and America.

In Dimona, since 1962, the internal migration was the principal source of population growth. Towards the end of the 1960s and the beginning of the 1970s, the balance of migration has begun to be negative. The year 1962 was the peak year in terms of immigration (1500 have entered), but was also a peak year in terms of emigration (23.5 percent have left the town). In 1966, this rate decreased to

emigration of only 5.4 percent. In 1976 the rate of emigration was 5.8 percent and in 1980 it was 4.06 percent. The percentage of emigrants (out of the total number of residents) is similar to the percentage in towns from the same category as Dimona, but the percentage of immigrants (out of the total) is significantly lower. In 1980 it was 3.9 percent for Kiryat-Gat, 4 percent for Ashdod, and only 2.85 percent for Dimona.

A more refined analysis of the age structure of those who leave reveals that most of those who are leaving are among the young generation, i.e., ex-soldiers and young couples with or without children.

In a survey conducted in Dimona in 1967, it was found that 30.3 percent of the heads of families in the town have immigrated to the town voluntarily. The main reasons for the immigration were: availability of jobs (60 percent) and relatives and friends (23.4 percent). It was found also that 46 percent have immigrated from urban settlements, 29 percent from other development towns and 25 percent from rural settlements.

The study concludes also that heads of families, who have transferred to Dimona directly from abroad, are the least mobile, and the longer they stay they have less tendency to leave the place. Most of those who have left have done so during the first two years. The main reasons for staying are:

1. Insecurity--stemming from lack of knowledge and information about other places.
2. Loyalty which has developed towards the place over the years.
3. Being older--the average age of the heads of the newcomer families is 48 compared to 42.3, the average newcomers' age of the families in Dimona.
4. Larger families--which increase immobility.

3.2. Demography

a. Age Structure

The age distribution in both towns is similar and comparable to the age distribution in most of the development towns. The most outstanding feature is the share of the age group 0-14. In Yerucham, this age group constitutes 43 percent of the population, in Dimona it constitutes 40 percent, while it is 37.1 percent in other development towns and 30 percent among the Jewish population in Israel. The share of the age group 15-29 is 29 percent in Yerucham and 27 percent in Dimona. This share is similar to the share of this age group in the Southern region, and somewhat higher than the national average. The share of the adults (the age groups 30-44 and 45-65) is lower in both towns compared to the national average. In Yerucham, the share of the age group 65 and over is especially low. This phenomenon is typical to places in which population is unstable and many leave at younger ages.

The average age in Yerucham is 20.3 years and in Dimona, 24.1 years. The implications of this type of age structure are:

1. A great share of the resources have to be invested in education, vocational education and recreational facilities for the age group 0-14. This means a financial burden on the family and the local municipality.
2. Low rate of participation in the labor force. The dependency ratio[2] is relatively high. The dependency ratio in Dimona was 1.17 in 1977 and in Yerucham 1.33 compared to the natioan ratio of 1.02. In 1978 the ratio was 1.13 for Dimona, and 1.23 for Yerucham.
3. The percentage of those who are entering the labor force is high which means that more jobs have to be supplied to satisfy the increasing demand.

b. Country of Origin

Most of the groups of newcomers who were sent to Dimona and Yerucham were of Asian-African origin. (In Dimona, it totaled to 70 percent of the immigrants.) Over the years, the share of those who have immigrated from Europe and America--among the other immigrant groups--have decreased because of their lower birth rate compared to the share of those from Asia and Africa, and because they have

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[2]Dependency ratio = the age groups 0-19 and 65+ / the age group 20-64.

consisted of a larger part among those who have left the towns relative to those who have entered.

In Yerucham, the lion's share of Yerucham residents (91 percent) originated from two countries: Morocco (70 percent) and India (20 percent), the rest (10 percent) are from Iran, Anglo-Saxon countries and others. More than half of the population (in 1980) has immigrated to Israel between 1948-1965, and only 6 percent came between 1965-1972. This explains the large share of large families and other demographic, economic and social characteristics.

Following is a short description of the main communities in Yerucham:

The Moroccan community. Most of the Moroccan residents have immigrated to Israel in the late 1950s and early 1960s. They came from different places in Morocco, and organized themselves mainly on the basis of extended family groups ("Hamulot"). In the beginning of the absorption process, these units have gained political power. The phenomenon is quite common in some urban neighborhoods and in development towns, and is common in Yerucham as well as in Dimona. One of the main motivations for Moroccans to immigrate to the town is the willingness to live close to family and relatives.

The Indian community. The Indian community comprises some 20 percent of Yerucham's population. (In 1980, there were about 350 families.) Most of them arrived

TABLE 3.3

THE POPULATION OF YERUCHAM BY ORIGIN (1972)

Origin	Yerucham (%)	Israel (%)
Yerucham's Residents	100	100
Israel	37	47
Asia - Africa	58	25
Europe - America	5	28
Heads of families	100	100
Israel	1	8
Asia - Africa	91	47
Europe - America	9	44

Source: Friedman, 1980, p. 34.

to Israel in the late 1960s and early 1970s. Their absorption process was accompanied by many difficulties, sometimes even violent conflicts, mostly with the Moroccan community. Today, there is not any apparent conflict between the Indian community and others, however, it seems that the Indian population feels discriminated against. This feeling is caused by several factors: the language of this community is Amharic, which is not a Sematic language, many of the youngsters have difficulty in learning Hebrew, and others have difficulties in understanding them. Another factor is their religion--most of the Indian population of Yerucham belongs to the "Bnei-Israel" ethnic group, and the chief Rabbinate of Israel placed their Jewishness in question. This led to such discrimination against them that for quite a while they were forbidden to marry Jews of other ethnic background. This prohibition no longer exists, but they tend to marry among themselves. The third factor is an institutional factor. Most of the key positions in Yerucham's agencies were already filled by people of other national backgrounds when the Indian immigrants arrived in Yerucham. Relatively well-established political groups were already in existence as well. The result is that not one member of the Indian community has managed to become a senior official in the local council, in any other public service agency or in the local plants and service facilities.

The other communities--the Persian community and Ashkenazim make up about 10 percent of Yerucham's population. They include: the Rumanian community which was the founding group of Yerucham in 1951. There are about thirty families of Rumanian origin in the town today, most of whom are elderly. Most of the original group of newcomers, especially the younger generation have left.

In Dimona, historical data on the distribution of the population by country of origin shows that the share of those who were born in Israel, has increased considerably (see table 3.4). This is due clearly to the high birth rate which characterizes this population. The share of those who were born in Asian and African countries has decreased. The same is true for those who were born in European and American countries but to a lesser extent. Most of those who were born in Israel are children of parents who were born in Asian and African countries. A more refined analysis of the data will show that in 1972, the share of those whose origin is in one of the Asian/African countries is larger.

When the distribution by country of origin in Dimona is compared to the distribution in the Southern Region and in Israel, it shows that the share of those who were born in Israel is smaller relative to their share in the Southern Region, and in Israel. The share of those who were born in Asian-African countries is higher compared to their share in

TABLE 3.4

THE POPULATION OF DIMONA BY ORIGIN

Origin	Year		
	1967	1972	1977
	100	100	100
Israel	5.5	37.1	43.9
Asia - Africa	73.1	44.8	43.2
Europe - America	21.4	18.1	11.1
Heads of Families		100	
Israel		20.5	
Asia - Africa		63.7	
Europe-America		15.8	

the Southern Region and in Israel, and the share of those who were born in European and American countries is considerably lower.

c. Size of Family

The average size of a family in Yerucham is 5.1 persons per household while the average size among the Jewish population is 3.6. The families with 6+ persons per family constitute 40 percent of the families in the town compared to 14 prcent in the Jewish population (1972). A similar situation existed in 1977.

The average size of a family in Dimona is higher than the national average as well. In 1967 it was 4.6 persons per household (3.7 in the Jewish population). Approximately 23 percent of the families have seven and more persons per family. In 1975, 38.2 percent of the families had four and more children compared to 14.5 percent among the Jewish population.

3.3. Years of Schooling

Most of Yerucham's population (age 14+) is in the lower level of schooling. The median age of schooling in 1977 was 7.5 years compared to the national average of 10 years. Outstanding is the high percentage of those lacking formal education, which is double the average in the whole region (which is itself low, relative to the national average). The low level of formal education can be also

seen in the small percentage of those with high education (3.6 percent) compared to the whole region (11.9 percent).

Dimona's population is characterized by a higher level of education compared to Yerucham, but a lower level compared to Arad, the Negev (Southern) Region, and the national average. Half of the population have elementary education and less, and 15 percent of them do not have any formal education. Only 30 percent have secondary education compared to 55 percent in Arad and 40 percent in the Negev and the whole country. The percentage of those with high education is smaller compared to the average in Arad, although it is close to the average in the Negev.

3.4. Standard of Living

The standard of living of the population in Yerucham and Dimona is significantly lower compared to the national averages. In Yerucham the income per capita was 60 percent of the national average (for 1977).

Another characteristic of the low standard of living can be found in the rate of motorization which is 25 per 1000 persons in Yerucham (for 1978), and 43.5 in Dimona. The national average is 116.

The low level of income and standard of living stem from various reasons: low-skilled and non-skilled labor force, large number of persons per family who are dependent on one wage earner, and the low rate of female participation in the labor force.

The low level of income is combined with a high rate of welfare recipients. Although there was a decrease of 45.4 percent in the number of families who get public assistance (from 9.4 percent of the families getting help in 1973 to 3.9 percent in 1978), relative to the national average it is still quite high. (The national average in 1978 was 1.3 percent.) In Dimona there was also a decrease (from 7 percent in 1975 to 5.0 percent in 1978) but relative to the national average and even compared to Yerucham the percentage of families getting public assistance is quite high.

The rate of social workers per 1000 residents in Dimona is 2.5 times the rate in the whole country (0.99 in Dimona and 0.40 in the whole country), but the percentage of the social work positions filled is 66.7 percent compared to the national rate of 84 percent. This percentage shows that there are welfare problems in the town, and that there is an institutional awareness, but it also indicates that the necessary services are not supplied adequately. In Yerucham, the rate of social workers per 1000 population is even higher--1.47, but the percentage of social work positions filled is only 66.7 percent.

Another indicator for the low standard of living in the towns is the average income from local taxes per capita. In Dimona it was 248 I.L. in 1976, in Yerucham 257 I.L., while the national average was 987 I.L.

The housing density in both towns is high. The percentage of the population which lives in high density (3+ per room) was 11.7 percent in 1972 compared to a national average of 6.2 percent and only 1.9 percent of the residents of Arad lived in such a high density. In Dimona, 17.1 percent of the residents lived in the high housing density of 3+ per room. (In Israel, adequate housing density is considered to be 1.5 persons per room.)

3.5. The Education System

The systems of formal and informal education in Dimona is quite impressive in its range and in the variety of studies and activities during the day and in the evenings.

The formal education system consists of 10,000 students, starting from day-cares to high schools. There is a school of music (conservatory) with 700 students. Various youth movements are active in the town, and lately two groups were formed tending to go to the rural settlements after their military service. Although it may mean, from the town's point of view, a loss of young people, it indicates a successful absorption process into the Israeli society.

56.25 percent of the municipal service employees are employed in education services (1125 employees). The school buildings are used in the afternoons and evenings as community centers and libraries.

Secondary education. Rapid progress has been taking place in the area of secondary education. In the 1960s there was only one vocational school, and in the 1970s there were three schools for grades 7 to 10, and two for the 11th and 12th grades.

In 1980, the rate of high school students was 61.7 (per 1000 population) compared to 25.0 in 1967 and 8.1 per 1000 in 1961. The national average was 54.1 in 1980. The ratio in Dimona is, therefore, quite high, nevertheless, a different calculation will reveal a slightly different picture: the rate of students per children in the age group 14-17 in 1980 was 72 percent, while the national average is 83.1 percent.

Vocational education. In 1974, there were 420 students in the vocational school studying mainly: fashion, blacksmithy, electronics and drafting. In 1980 there were some 600 students in the vocational system.

In addition to the school there is a center which provides basic vocational education to pre-military students in carpentry and blacksmithy.

Yerucham enjoys a variety of educational institutions and services. In the eight schools it has (elementary, secondary and vocational), there are 2,264 students. In addition, there is a special vocational school ("Miftan") for drop-outs. A large number of institutions

does not indicate that the quality of education is high. Due to the small size of the place and the large number of educational institutions, it is difficult to provide a variety of educational programs. Moreover, as in many of the development towns, there are problems in filling the vacant jobs. As a result, the quality of the teachers is lower, there is a low percentage of experienced and qualified teachers, most of the teachers have just finished school and they lack experience, teachers stay for short periods (one-two years) and the turnover is very high, many of the teachers live outside the town and do not contribute to the social and community life after work hours, and there is a shortage in professional teachers. This situation is severe especially because of the existence of a very high percentage (90 percent) of students who need special assistance.

A unique phenomenon which characterizes the development towns in general and Yerucham and Dimona in particular is the tendency to send children to boarding schools outside the towns. The reasons are: 1) to provide better education opportunities for the children; 2) to decrease the economic burden from the family, since these schools are highly subsidized. The chances are that most of these children will not come back to the towns after graduating.

3.6. Labor Force

In 1980, 1484 employees from Yerucham have been employed in the various sectors (industry and services) in the town and outside. This labor force consists of 24 percent of the population which is a low ratio compared to the national average (35.8 percent). In Dimona the ratio is approximately 30 percent.

The main reasons for this low ratio in both towns are: 1) the population is young. In Yerucham only 54 percent are of working age compared to the national average of 62.5 percent. 2) Increasing rate of students among those in the age group between 14 and 17. 3) High rate of housewives who are reluctant to go to work either because of traditional customs or lack of available jobs.

a. Distribution by Occupation

From the distribution of the employed by occupation (table 4.13 in chapter IV), it can be seen that half of the employees from Yerucham concentrate in blue-collar jobs. Another quarter are in the services (low level), and the rest are scattered among white-collar jobs while the percentage of academicians is almost nil. This type of distribution of occupations indicates that the level of income is low which implies also a low standard of living. The situation in Dimona is quite similar.

b. Distribution by Branches

The main employment branches in Yerucham are: industry and services. In 1961, some 26 percent were employed in the industry, and in 1973, 65 percent of the labor force was employed by manufacturing and mining, and 29.7 percent were employed by the service sector. In Dimona, almost half of the labor force was employeed by industrial plants in 1962--48 percent and 29.8 percent by services. These numbers increased to 55.5 percent in industry and mining in 1973, and 37.4 percent in the service sector. The rate of those who were employed by the construction sector has decreased from 16.5 percent to 6.4 percent between the years 1961 and 1973 (see table 4.12 in chapter IV). This structure has not changed till today.

In Yerucham, out of those who are industrial employees, about half are employed in the town while approximately a quarter are employed by the various regional plants, and the rest work in other plants in the region.

The workers in the industrial plants in Yerucham include also 218 workers from Dimona and 21 commuters from Beer-Sheva and the northern parts of the country. The industry is therefore the main employment branch the town is based on. The percentage employed in the industrial sector is high compared to the national average and it is similar to the percentage in Dimona.

Out of those employed in services, the lion's share works at the local municipality and in the neighboring college in Sede-Boker. The rest are employed by various institutions in the town. The share of those employed by the service sector is low due to the undeveloped service sector in the town. Most of the services (accountants, legal services, engineering and auxiliary facilities) are supplied by Beer-Sheva and the central part of the country.

The percentage of workers in the service sector in Dimona is slightly higher (36 percent), but the town shares the same problems faced by Yerucham. Most of the needed services are supplied by agencies in Beer-Sheva and in the metropolitan region. In Dimona itself, some 2880 workers are employed in the service sector. Two thousand of them are in public and municipal services (most of them teachers), 480 in personal services and 400 in commerce. Data on the development of the commercial sector shows that the standard of living has improved. There are many more stores for electronics, appliances and clothing, and new stores for carpets and housing articles.

Another employment source is the tourist resorts and especially the hotels along the Dead Sea. Only fifty from Dimona are employed there due to lack of commuting arrangements, and increased demand for cheap Arab labor force.

In 1980, some 66 workers from Yerucham and some 300 from Dimona (80 males and 220 females) were employed by the American company which built the military airports in the Negev area. This is a solution for the short run (two-three years). The work with this company is not as attractive as it had been thought, because of the "American work ethics" demanded from the workers and the "Israeli salary" paid.

Employment in the construction sector has decreased considerably over the years. The amount of work depends on the demand for housing.

3.7. Employment

Dimona was established in an area with a strong industrial potential.[3] Its location was dictated by the distances to various existing and future industrial zones. Over the years, more natural resources have been discovered and they are in the process of exploitation.

In comparison to most of the development towns which were established under the pressure of mass migration without any employment or industrial infrastructure, Dimona was established with a strong indsutrial potential, but has not actually always benefited from this potential.

In order to analyze the employment situation in Yerucham and Dimona, the whole region should be considered. (See table 3.5 on the regional distribution of employment.)

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[3]A detailed description of the industrial plants is given in chapter V.

TABLE 3.5

SPATIAL DISTRIBUTION OF WORKERS IN THE NEGEV REGION

Name of Plant	Total No. of Workers	Yerucham				Dimona				Arad	Beer-Sheva		Remarks
		Total	A*	B**	C***	Total	A	B	C	Total	Total		
Yerucham													
Foenicia	475	300	10	110	180	165	15	100	50	1	10		3 top managers from Beer-Sheva
Negev Ceramics	80	43	3	12	28	33	4	14	15		3		General Director from Tel-Aviv
Lon	34	23		10	13	10			10				Manager from Tel-Aviv
Brand Metal	20	10		4	6						10	4 managers	
Tempo Zippoi	25	15	3	2	10	10	1		9				
Long John	16	12			12	1		1			3		Manager and technical workers from Tel-Aviv
Zevi Hovala	15	15	8	.7									
Dimona													
Kittan Dimona	1250	55	1			900	-3	00-	600				320 Arab workers
Dimona Textile	630	50			50	375					75		155 from the West Bank
Sodom Metal	250	5		5		200							Some workers from Arad and Beer-Sheva
Plasteco	10	1				9		3	6				

TABLE 3.5--Cont.

Name of Plant	No. of Workers	Yerucham				Dimona				Arad	Beer-Sheva	Remarks
		Total	A*	B**	C***	Total	A	B	C	Total	Total	
Region												
Dead Sea Works	1365				400					300	600	
Negev Phosphates	1692	174			776					243	391	108 from Tel-Aviv and the central parts
Periklas	180				80					80	20	

Comments:

A* - Managers, engineers.

B** - Technicians and professions--skilled and semi-skilled.

C***- Unskilled workers.

The distance from Dimona to the farthest place of employment ("Dead Sea Works") is 45 km. The distances to other places ("Periklas" and "Negev Phosphates") are 20-30 km. In order to provide jobs to those heads of families who could not find adequate jobs in the regional plants, and to supply jobs for the women, two big textile plants were established close to the town--"Kittan Dimona" in 1958 and "Sivi Dimona" in 1960. (See table 3.6 on the industrial development of Dimona.) Both plants employed, in 1966, 1788 employees which consisted of 43.4 percent of the town's employees. Most of the employees were semi-skilled and unskilled workers. The regional chemical plants have employed as well semi-skilled and unskilled workers from Dimona. These jobs were adequate for the educational and professional level of most of the newcomers. For the last decade, the number of employees and their share among the total employed has decreased. In 1980, 1295 workers have been employed (16 percent out of the employees in the town). This decrease indicates to some extent a decrease in the dependency of the town on labor-intensive, less developed plants. Despite this decrease, a great share of the workers (45 percent) are concentrated in few plants (eight). There is a risk in this concentration since any economic crisis in one of the plants may bring unemployment.

Out of the eight big plants, there are the two textile plants and the glass plant in Yerucham, "Foenicia,"

TABLE 3.6

THE HISTORICAL DEVELOPMENT OF THE PLANTS IN DIMONA
(by number of employees)

Plant	Year																		
	E*	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
Kittan Dimona	1958	1342	1350	1350	1350	1350	1457	1511	1501	1501	1501	1538	1439	1500	1450	1425	1425	1250	1050
Dimona Textile Yerucham Textile	1958	650	480	520	550 E.133	550 140	800 513	943 469	1000 400	1000	1000	545	490	495	495	514	600	630	600
Dagan (Bakery)	1959	24	24	24	24	24	14	27	32	32	32	32	42	40	62	60	60	60	60
Haroshet Barzel	1961	26	26	26	26	26	25	25	23	23	C.								
Shmuelevitz	1961	25	25	25	25	25	8	18	23	23	23	22	24	28	23	22	22	22	22
Dimona	--	E.35	40	C.															
Defus Dimona			E.2	5	8	5	5	6	10	10	10	7	7	7	7	7	7	7	5
Hamarkivim					E.20	20	26	30	41	41	41	40	5	5	5	10	6	6	6
Aviad					E.4	6	4	6	6	6	6	10	8	9	5	5	5	5	5
Glima					E.16	54	C.												
Kalamit					E.12	13	C.												
Magen					E.11	20	30	14	21	C.									
M.G.M.						E.12	30	17	12	12	12	13	13	13	6	11	17	17	17
Iriyat Dimona							E.12	15	22	22	22	23	25	23	9	C.			
Sakom								E.17	67	67	67	71	77	35	28	28	32	30	22
Sodom Metal								E.100	130	130	130	200	200	150	130	190		250	200
Azulai									E.11	11	11	10	17	20	25	C.			
Plasteco												E.10	15	15	--	130	115	10	10
Demi-Or									E.						25	33	33	33	12
Alvo												9	5	15	75	70	60	60	100

TABLE 3.6--cont.

	Year																	
	E*	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
Ceramic Casting												E.8	150	300	73	66	41	C.	
Friction Material															350	306	216	C.	
Maas												E.21	21	34	36	27	18	18	21
Isragil													E.15	27	26	25	13	13	10
Mifali Tovala													E.20	24	24	25	25	25	25
Mor															E.15	20	20	20	20
G.D.G.															E.17	11	11	11	40
Total # Plants[1]		20	24	28	33	33	44	51	51	51	51	79	79	80	81	72	48	48	64
# of employees[2]		2102	1921	1950	2179	2245	2924	3198	3299	2878	2855	2559	2563	2740	2880	2989	2726	2477	2225
# of employees[3] (in other plants)		56	279	235	121	780	267	291	356	777	800	711	718	614	525	1117	1953	1823	1706
Total # employees[4]		2158	2200	2185	2300	3025	3191	3489	3655	3655	3655	3270	3281	3354	3405	4106	4679	4300	3931

Notes: E--Established

C--Closed down

*--In the first column, the date of establishment of the first five plants is indicated.

1. Total number of plants--includes some small plants and workshops which are not specified in the list.

2. Number of employees--number of employees from Dimona and other places who are employed in Dimona.

3. Number of employees in other plants--number of employees from Dimona employed in small plants and workshops in Dimona and in the region.

4. Total number of employees-- (2) + (3).

Source: Ministry of Commerce and Industry, The Department for Development Regions. "Survey of the Industrialization of Development Towns," for the years 1963-1981.

which is similar to the textile plants in its characteristics (the types of jobs available, technology, difficulties in the world markets, etc.).

One unique plant which belongs actually more to the auxiliary services sector is "Sodom Metal." This plant gives the needed blacksmithy and welding services to most of the industrial plants in the region and employes 250 workers.

After a long time in which no new plant was established in Dimona (except for small workshops, experiencing high turnover as table 3.6 shows), two advanced plants began to operate in 1975. The two plants, "Friction Materials" and "Ceramics Castings" have produced various accessories for cars and heavy machinery. Large governmental investments were made to assure rapid industrial development. The plants have created hopes and expectations for future adequate jobs and an overall economic development. At the beginning some ninety workers were employed, and the forecast for 1977 was for eight hundred employees. After two years of operation, both plants were closed down. The main reasons were continuous managerial problems which have affected the working life in the plant. This closing down was a blow to the town.

The other four plants are the three regional chemical plants and the defense related industrial plant. They are actually "national projects" which were established

due to national considerations. As such, they are least vulnerable to economic fluctuations and risks.

Inspite of the close distance to these plants, only 42 percent of the workers in the plants (1280 out of 3045) are from Dimona, the rest commute from Beer-Sheva and Arad. This is a result of processes which have been taking place over the last thirty years in which people who have improved their socioeconomic status have moved to towns like Beer-Sheva and Arad which have higher socioeconomic standards of living. The commuters are subsidized by the plants for the time and money spent on commuting. The plants offer also assistance in acquiring housing in all three locations for their employees.

Yerucham, in contrast to Dimona, was established without any sources of employment. Between the years 1962-1964, in which the size of the population had increased threefold, there were only eighty jobs in industry. (See table 3.7 on the industrial development of Yerucham.)

Only in 1968 was the first big plant established--"Foenicia" and later on "Tempo," both manufactured glass. In 1972 "Negev Ceramics" was established. Due to the lack of income sources, most of the population relied on welfare payments between the years 1962-1968. It is believed that this phenomenon had an impact on the place till today.

TABLE 3.7

THE HISTORICAL DEVELOPMENT OF THE PLANTS IN YERUCHAM
(by number of employees)

Name of Plant	Year																		
	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
Lon Laboratory	E.	10	16	16	16	16	10	19	19	19	19	70	67	50	39	40	40	40	34
Fiberglass		E.	5	5	5	5	6	5	5	5	5	9	9	C.					
Kristal Hanegev		E.5	9	C.															
Bagir		E.42	26	C.															
Feingold		E.5	5	C.															
Pipelines		E.14	C.																
Avitan			E.2	C.															
Israglass			E.10	C.															
Tempo:				E.															
Bottles															533	450			
Beverages						300	340	500	500	500	500	595	549	452					
Corks																	550	480	475
Foenicia					E.52	55	55	60	60	60	60	81	94	96	90	100			
Yerucham Threads					E.23	23	C.												
Zaltsberger								E.16	C.										
Negev Ceramics												E.100	170	90	87	85	85	80	75
Novam Textile												E.80	50	60	40	41	C.		
Ben Ivry													E.6	6	C.				
A. B. Textile													E.14	15	C.				
Miftan															E.37	40	40	40	44
Univers																E.25	25	C.	

TABLE 3.7--cont.

Name of Plant	Year																		
	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
Basmat																E.4	5	4	4
Brand's Metal																	E.10	10	14
Avisror																	E.6	22	22
Tempo Zippoi																		E.	27
Long John																		E.	16
Zevi Havola																			E.25
Total # of Plants[1]	1	6	11	8	7	10	10	12	9	9	9	13	13	15	11	14	14	14	19
# of Employees[2]		76	73	21	96	399	411	600	684	684	684	935	959	769	826	785	761	676	736
# of Employees (in other plants)[3]			10	8	5	8	3	223	187	139	202	479	500	420	310	313	362	454	404
Total # of Employees[4]		6	83	29	101	407	414	823	771	823	886	1414	1459	1189	1136	1098	1123	1130	1140

Notes: E--Established

C--Closed down

1. Total number of plants--includes some small plants and workshops which are not specified in the list.
2. Number of employees--number of employees from Yerucham and other places who are employed in Yerucham.
3. Number of employees in other plants--number of employees from Yerucham employed in small plants and workshops in Yerucham and in the region.
4. Total number of employees--(2) + (3).

Source: Ministry of Commerce and Industry, The Department for Development Regions, "Survey of the Industrialization of the Development Towns," for the years 1963-1981.

Since then, only a few small plants and workships have been established, and the turnover is quite high.

The Regional Distribution of Employment

Table 3.5 indicates that more than one-third of the workers from Dimona are employed outside the town. From Yerucham, some 35 percent are employed outside the town. These are commuters who travel everyday to their work places. For some (those who are employed by the chemical plants), the traveling and the time spent are paid by the plants. The employment issue in both towns should be studied on the regional level since it will give a more comprehensive picture of the employment situation in the industrial sector.

The regional distribution of the workers from Dimona and from the region has changed over the years. In 1967 only 1.8 percent of the employed came from outside. In 1972, the percentage grew to 17 percent and has stayed the same in 1980. Most of the outside workers are Arabs who commute from the West Bank. They are employed in low-skilled jobs refused by Jewish workers.

A smaller fraction of these outside commuters are managers, engineers and other professional and skilled workers, since the town cannot yet supply all the industrial requirements for these top job holders.

In a comparative analysis (between the years 1972 and 1980) of the work place of Dimona's residents it was found that there is a decrese in the percentage of workers from Dimona who work in their town. It went down from 82.4 percent in 1972 to 63.5 percent in 1980.

Although it may imply that there is a shortage of available jobs in the town, it mainly indicates that there is an occupational advancement of the workers who find better and challenging jobs in the region. The decrease in the percentage of the workers from Dimona in the two textile plants is another indication of this phenomenon.

In Yerucham, between the years 1972 and 1978, there was a decrease in the number of employees in the industry, but between 1978 and 1981 the share of the industrial employees has increased.

A closer look into the data shows that the increasing share refers to the employees in the industrial plants outside of Yerucham. This phenomenon has happened as a result of the curtailment in employment in local plants, especially in "Foenicia" and in the expansion of employment in plants outside Yerucham. Since the textile plants have curtailed their labor force as well, it seems that the increase in employment is mainly in "Negev Phosphates."

In 1978, 160 outside employees have commuted everyday to Yerucham, and in 1980 this number increased to 218. This shows that the rate of commuting in the region is

increasing but it also indicates that a process of polarization is taking place among the various settlements in the region, i.e., each town is "specializing" in a specific quality of its labor force, based on the level of skills. In the case of Yerucham, it turns out that the town exports to the industrial plants in the region, non-skilled and semi-skilled labor force, while importing the medium and high skilled labor force, including management.

The impact of this phenomenon is crucial for the town. Except for the negative image it gives to the town, there is a reluctance of the professional and managerial labor force to settle in the town. This in turn reduces the amount of expenditures made in the town and, therefore, decreases the level of services and quality of commercial services and altogether the attractiveness of the town.

3.8. Unemployment

In contrast to many of the development towns, both towns have not experienced high rate of unemployment throughout the years, even at the recession period, 1965-1967. In the case of Yerucham it was due to the relatively high percent of people employed in relief work up to 1968 (when the two glass plants were established).

From 1979 on there has been an increase in the unemployment rates. In Dimona in 1980, the number of unemployed per 1000 for the age 17+ was 40.06 compared to

the national average of 38.06 per 1000. (The number of unemployed does not include those who have not registered or those who have refused to take jobs offered.)

In Yerucham, there has been a gradual increase in the number of unemployed, approximately 5 percent of the labor force.

In both towns the unemployment problem is severe especially among the ex-soldiers, high school graduates who refuse to take the available jobs in the labor-intensive plants and do not have other job options.

Summary

The social, demographic, and economic pattern of the developments of Yerucham and Dimona is not unique. All the development towns have experienced in one way or another similar patterns. Nevertheless, due to the remoteness of these two towns these patterns are more prominent.

The next chapter will analyze the situation in Yerucham and Dimona compared to the situation in other development towns and in the country which will highlight the severity of the problem in these two towns.

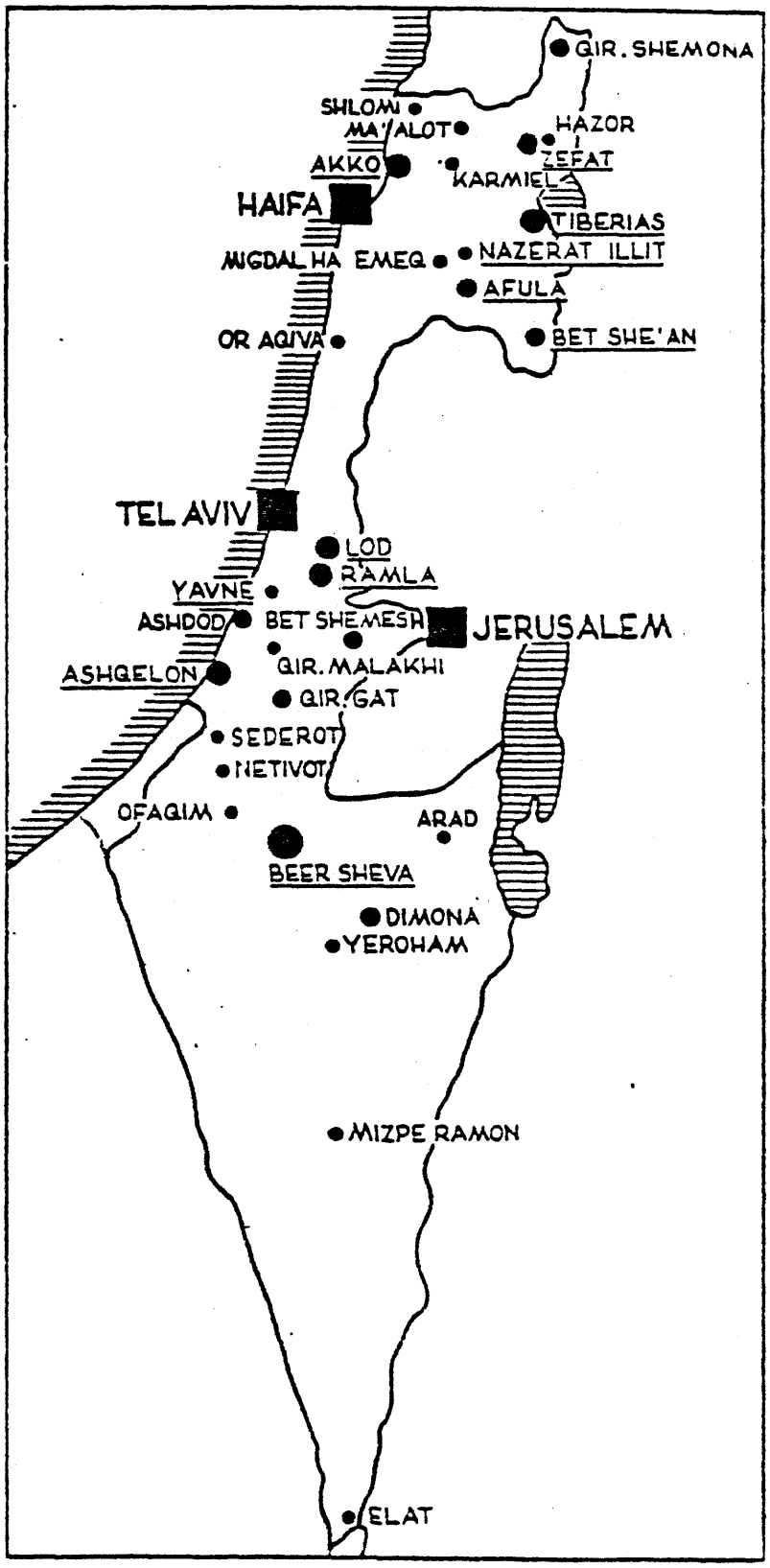
CHAPTER IV

DESCRIPTION OF THE CURRENT SITUATION OF THE DEVELOPMENT TOWNS--THE "ISLAND PHENOMENON"

In order to understand the roots of the problematic situation in the development towns in general and in Dimona and Yerucham in particular, it is hypothesized that the "island phenomenon" concept can serve as a basic framework for analyzing the current situation of the development towns.

The "island phenomenon" is defined as a situation in which the development towns possess characteristics of developing countries, within the context of the developed society of Israel itself. The notion of "island" is a relative one. When one studies the absolute performance of the development towns in the seventies and eighties, compared to the one in the fifties, there is no doubt that the situation in later years is far better and that the development towns have been progressing since their establishment. The roots of the problems lie in the relative success of the non-metropolitan industrial towns compared to the other towns and to the rest of the country. In this relative progress, measured by a wide range of socioeconomic indicators: the level of education, income,

MAP 4.1 : ISRAEL - DEVELOPMENT TOWNS



housing conditions, rate of motorization and other indicators of the standard of living, one may find the roots of the problem.

In addition to this gap, measured by 'objective" indices, part of the crisis in the late seventies and eighties, seems to be the subjective perceptions and impressions of this gap by the local residents as well as by outsiders who are involved with the economic and social development of the development towns, e.g., industrialists, policy makers in various levels, etc. These perceptions have their reflections on the behavior of the different groups. Moreover, it is not only the proportions which have been distorted, there are also the growing expectations of the inhabitants in the development towns who have been exposed in various ways to these differences. Employment policies, motivation to work, and work ethics are all influenced by this perceived gap.

In the following chapter, the existence of the "island phenomenon' will be examined from three angles:

4.1. The socioeconomic perspective--based on statistical data on the socioeconomic status of selected development towns, it will be shown that the non-metropolitan industrial towns are still lagging behind the rest of the country and even behind the rest of the other development towns.

4.2. The industrial and employment perspective--based on statistical data and studies conducted on the industrial structure of the development towns, a comparison will be made between the latter and the industrial structure of the whole country, in order to highlight the gap between the two, and to show the effects on the socioeconomic structure of the towns.

4.3. The subjective perception of the phenomenon--the image of the development towns in general, and of Yerucham and Dimona in particular as it is perceived by their inhabitants and by policy makers in the local, regional and national levels.

4.1. The Socioeconomic Perspective

The "island phenomenon" is a relative concept. It describes a situation existing in the industrial, non-metropolitan development towns,[1] relatively to the

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[1]There is no single, universally accepted definition for a development town. Each governmental department uses different criteria to give a town a status of a development town. For a working definition, the following criteria, based on several studies will be used: A development town is a town which meets one of the following criteria:

1. An urban settlement, established after 1948 as part of the government population dispersal plan.
2. An old settlement which received a significant number of immigrants through government direction, and whose population at present is mainly composed of persons of Asian and North-African descent (see table 4.5).
3. A settlement located in either an underdeveloped area or on the outskirts of a large city, having the character of a slum town.

situation in other towns.

The group of industrial non-metropolitan development towns consists of some twenty-nine towns (90 percent). The development town concept was introducted into the settlements system in the beginning of the fifties, and the towns have become the primary mechanism for pursuing the goal of population dispersal. Since then, some thirty new towns have been established. (The essential statistics on these towns are described in table 4.1)

Approximately, half of the towns were built or reestablished in the period up to 1951. Between 1952 and 1957 a further eight were built. The pause which followed was broken only in 1961 when a start was made on two more towns: Arad and Carmiel.

The main function envisaged for most of the development towns was to be the service centers--providing administrative and economic services in the regional level--for the rural settlements in their respective regions. (Kiryat-Gat is the classical example for the Lachish region.) However, adequate links between the new towns and the already existing and self-sufficient infrastructure built up among the collective villages were not established. There was indifference or antipathy

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4. A settlement which is greatly dependent upon government development aid beyond what is usually granted for local development.

TABLE 4.1

THE ESSENTIAL CHARACTERISTICS OF THE DEVELOPMENT TOWNS.

Settlement	Year of Establishment	Size-1978 (thousands)	Distance[1] (km)	Function
Afula	1925	18.9	44	industrial, service
Akko	Ancient	37.2	22	industrial
Arad	1961	10.1	154	industrial, tourist, bedroom
Ashdod	1956	58.7	40	industrial, port city
Ashkelon	1949	50.6	61	industrial, service
Beer-Sheva	Ancient	103.3	110	industrial, service
Beit Shéan	Ancient	12.8	70	industrial, bedroom
Beit Shemesh	1951	11.8	32	industrial, bedroom
Carmiel	1965	9.7	43	industrial
Dimona	1955	27.3	149	industrial, service
Eilat	1951	18.2	342	port city, service
Hatzor	1953	5.9	84	industrial
Kiryat Gat	1965	23.1	60	industrial, service
Kiryat Malachi	1951	10.5	44	industrial
Kiryat Shemona	1949	15.8	109	industtial, service
Lod	1948	33.2	15	industrial, bedroom
Maalot	1957	3.7	50	industrial
Migdal ha-Emek	1952	12.7	25	industrial
Mitzpeh Ramon	1956	4.5	199	industrial
Nahariya	1934	27.6	31	industrial, tourist
Netivot	1956	7.5	80	industrial
Ofakim	1955	11.2	87	industrial, service
Or-Akiva	1951	7.5	42	industrial
Ramle	1948	38.7	20	industrial, bedroom
Sederot	1951	8.3	65	industrial, service

TABLE 4.1--Cont.

Settlement	Year of Establishment	Size-1978 (thousands)	Distance[1] (km)	Function
Shlomi	1950	8.3	60	industrial
Tiberias	18 B.C.	27.5	70	tourist, service
Yavne	1949	11.5	20	industrial, bedroom
Yokneam	1950	4.0	15	industrial
Yerucham	1951	6.1	143	industrial
Zefat	Ancient	14.9	73	tourist, service
Upper Nazareth	1957	19.9	38	industrial

[1]Distance--As measured from the development town to the closest metropolitan centers: Tel-Aviv, Haifa, Jerusalem.

Source: Berler, 1970; Ministry of Labor and Social Affairs, 1979.

expressed by the rural inhabitants towards the new "planted" urban centers (Cohen, 1970). Thus the development towns were bypassed by the settlements, while the central cities and especially Tel-Aviv became the main service center. However, one significant link between the two types of settlements has emerged and the development towns became the source of hired labor for the rural settlements. (In table 4.12 the percentage employed in agriculture demonstrates this situation.) Consequently, the development towns had to develop an economic base of their own.

Despite a certain uniformity among the development towns, the rate of development in individual towns has varied greatly. Some have developed dynamically, while others, due to social, economic and political disabilities of various kind, have tended to stagnate. Table 4.1 demonstrates the existence of types of development towns according to their size, distance and function. The distance is measured from the specific development town to the closest metropolitan center along the coast line (Haifa in the north or Tel-Aviv in the south) as well as Jerusalem.[2] The distance indicates the physical remoteness of the town from the metropolitan centers. The function

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[2]Beer-Sheva has emerged as a center of the Negev only since 1967 due to the renewed waves of immigration from the U.S.S.R., and to the important role the town has played since the occupation of the Sinai peninsula. Nevertheless, it cannot be recognized yet as a metropolitan center, although Arad for example was defined in table 4.1 as a "bedroom" community for Beer-Sheva.

indicates the actual direction of development of the town (in contrast to the intended or the planned one). Distance and function seem to be the most adequate lines of categorization for serving the purposes of this study, while the size of the town was found to be, in many cases, affected by distance and function.

Following the table, it is quite clear that most of the development towns are heavily based on industry, as the main source of employment, nevertheless, some towns have actually become service centers.

Outstanding in its volume and impact is the city of Beer-Sheva, which has become for the last decade the southern center of the country. Beer-Sheva is mainly a service center though it has a wide range of industrial plants. Some other towns have developed a small service centers beside industrial plants, e.g., Dimona, Kiryat-Gat, Tiberias, and Zefat. It is not surprising that all of the industrial towns are characterized by being more than 50 km. from the metropolitan centers, since none of them could compete on attracting industrialists and resources with the metroplitan itself.

Three towns: Tiberias, Zefat and Arad, have established themselves as tourist centers due to their locational advantages for tourism. Eilat and Ashdod have become port cities. In this case, the location by the seashore has outweighed any other locational advantages.

Five towns have become "bedroom" communities--Arad, Beit-Sheán, Beit Shemesh, Lod, Ramle, Yavne. Arad is a bedroom community to the workers in the regional plants--"Dead-Sea Works" and "Negev Phosphates" and for some who are employed in Beer-Sheva.

Today, there are twenty-nine industrial development towns which differ in their location and historical development. Some of them like Dimona, Arad and Yerucham are located close to the sources of raw materials used in industrial plants, some rely on "foot loose" plants like Kiryat-Gat and Carmiel, and some on both. From historical point of view, the towns were established in various periods and were populated by different groups of immigrants, as such they have enjoyed different capital and human resources, and benefited from different governmental policies. Among the industrial towns, those which are 50 km and more away from the metropolitan area (Tel-Aviv, Haifa and Jerusalem) are the focus of this study. The main reason for this selection was to capture the "distance" issue in industrialization, as will be discussed later.

In order to choose among the twenty-nine industrial development towns a representative sample for this study, the following criteria have been employed:

1. Size of the town: "Small" - up to 15,000 inhabitants; "Medium" - up to 50,000 inhabitants; "Large" - 50,000 and up.

2. Distance: "Close to the Metropolitan Area" - less than 50 km from one of the central cities (50 km was chosen because it is half of the way between Haifa and Tel-Aviv); "Far from the Metropolitan Area" - 50 km and up.

For the purpose of the analysis of the "island phenomenon" from socioeconomic perspective, eleven towns were selected: three groups of towns, each consists of two southern towns and one northern one, and two new (relatively) towns. Each group represents different mixture of the criteria used: size and distance. The groups are:

1. Small and remote towns: Dimona and Yerucham in the south and Kiryat-Shemona in the north.
2. Small and close towns: Yavne and Or-Akiva in the southern part and Yokneam in the northern part.
3. Medium and Large towns and remote: Beer-Sheva and Kiryat-Gat in the south and Afula in the north.

In addition, the analysis will consider the two development towns of Arad and Carmiel, which were established during the sixties and introduced a new version to the development town concept.

The statistics on the variety of development towns, and similar statistics on the whole country will clarify the socioeconomic status of the industrial towns.

Table 4.2 demonstrates clearly, on one hand, the various stages through which the population dispersal

policies have gone through, and on the other hand the extent to which each town was successful in attracting new inhabitants.

The years 1961-1967 were years of extensive industrialization policies and directing of immigrants to the towns. 1966-1972, were years of freezing in the population dispersal due to recession and the 1967 War which diverted human and capital resources to the new territories. The rate of growth declined. The years 1973-1978 indicate an almost halt or decline in the rate of growth in all towns. In these years the rate of immigration was smaller, and the population dispersal goal got lower priority among other national goals. Those towns which were better off still attracted new inhabitants. The last column in table 4.2 can be used as an indicator for the attractiveness. (One should keep in mind, that in the case of the bigger towns like Beer-Sheva and Kiryat-Gat, 10 percent growth is quite a considerable growth.)

Another phenomenon which should be noticed are the stages of development. In each case, the towns passed through a stage of high growth (some--60-70 percent and some 200-300 percent), then a stage of medium growth (for some 10 percent and for some 30 percent) and then a slower growth or decline (between 10 percent and -3.0 percent). In the third stage there seems to exist some growth, but a decline indicates a clear situation of unattractiveness, since the

TABLE 4.2

SIZE OF THE SELECTED DEVELOPMENT TOWNS (IN THOUSANDS) AND RATES OF GROWTH (IN PERCENTAGE) 1961-1978

Settlement	Year					Population Growth		
	1955	1961	1967	1973	1978	1961-1967	1967-1973	1973-1978
Dimona	0.3	5.0	19.0	26.3	27.3	28.0	38.4	11.4
Yerucham	0.5	1.6	4.8	6.3	6.1	20.0	37.5	-3.0
Kiryat Shemona	6.3	11.8	15.2	16.1	15.8	28.8	6.0	-1.8
Or-Akiva	1.7	3.2	5.9	6.6	7.5	87.0	11.8	13.6
Yavne	2.0	5.4	9.5	10.5	11.5	76.0	10.5	9.5
Yokneam	2.8	2.8	3.7	4.0	4.0	32.0	8.1	0
Afula	10.3	13.8	16.4	19.0	18.9	18.8	15.8	-0.5
Beer-Sheva	20.5	43.5	77.4	90.3	103.3	77.9	16.6	11.0
Kiryot-Gat	n.a.	10.1	16.3	21.0	23.1	61.4	28.8	10.0
Arad	n.a.	n.a.	2.0	7.5	10.1	n.a.	275	34.6
Carmiel	n.a.	n.a.	1.25	6.0	9.7	n.a.	380	61.6

Source: C.B.S. Yearly Statistical Books for the years: 1956, 1962, 1968, 1974, 1979.

volume of those who leave outnumbers the natural growth of the town.

Table 4.3 may further clarify the situation. It seems that the smaller towns (except for Arad and Carmiel) are suffering the most in times when governmental policies are not extensive in encouraging population and industrial plants to move to the towns. The larger towns have created some attractiveness independently of governmental policies.

The two towns of Dimona and Yerucham are experiencing a high rate of outmigration. The balances are: -22.3 and -35.4 respectively. Arad and Carmiel are the most attractive towns.

Tables 4.4-4.8 highlight the various demographic characteristics of the development towns compared to the rest of the country.

Table 4.4 summarizes data on places of birth and period of immigration. From the table it can be concluded that the majority of the residents in the new towns are immigrants who have arrived in Israel after 1948. In most cases, they represent some 60 percent-70 percent of the total population of the town. At the same time, these new comers account for 45.6 percent of the total Israeli population, and only 25 percent-30 percent of the population in the large, older cities (Jerusalem, Tel-Aviv and Haifa). In the medium sized and small old towns they account for 45 percent of the population.

TABLE 4.3

INTERNAL MIGRATION RATE[1]

Settlement	1956-1961			1973			1978		
	In-migr.	Out-migr.	Balance	In-migr.	Out-migr.	Balance	In-migr.	Out-migr.	Balance
Dimona	63.5	10.1	53.4	27.8	62.7	-24.9	22.5	44.8	-22.3
Yerucham				29.5	37.4	-7.9	26.5	61.9	-35.4
Kiryot Shemona	14.9	21.8	-6.9	16.7	46.9	-30.2	25.1	33.8	-8.7
Or-Akiva				15.3	29.3	-14.0	15.0	60.6	-45.6
Yavne	22.4	30.9	-8.5	16.5	37.0	-20.5	21.8	36.7	-14.9
Yokneam									
Afula	12.4	18.6	-6.2	30.2	59.3	-29.1	29.2	38.2	-9.0
Beer-Sheva	25.6	9.8	15.8	29.0	32.8	-3.8	28.5	36.6	-8.1
Kiryat-Gat	164.9	10.4	154.5	27.0	30.1	-3.1	32.6	42.5	-9.9
Arad	n.a.	n.a.	n.a.	128.1	90.5	37.6	122.2	102.2	20.0
Carmiel	n.a.	n.a.	n.a.	131.3	119.6	11.7	123.6	51.5	72.1

[1] Migration rate = $\frac{\text{number of in (or out) migrants}}{\text{total population in settlement}} \times 1000$

Source: Ministry of Labor and Social Affairs, 1979; C.B.S. Internal Migration, no. 33 (vol. II), 1967.

The high percentage of new immigrants in the development towns is undoubtedly the most striking characteristic of the towns. If one limits itself to the adult population solely, the new immigrants make up 85 percent-90 percent of the population.

In all the towns, the rate of those who were born in Israel is rapidly increasing due to the high rate of birth which characterizes the majority of the population in these towns.

Among the eleven development towns, Dimona and Yerucham have absorbed over the years more newcomers compared to the other industrial towns. In Dimona the rates of "born abroad, immigrated after 1948" were 74.9 percent in 1961 and 76.1 percent in 1967, while in Yerucham they were 80.9 percent and 80.5 percent respectively. In the rest of the development towns the rates were lower (except for Or-Akiva).

The population of the development towns is much more heterogeneous compared to the population in the older towns. Newcomers, from all points of the globe are found in the new towns. The immigrant population of the development towns, consists mainly of people who were born in underdeveloped countries in Asia and Africa (see table 4.5). However, in the older towns (established before 1948) the majority of immigrants were born in European countries which have attained a greater degree of economic and social

TABLE 4.4

POPULATION DISTRIBUTION IN THE SELECTED DEVELOPMENT TOWNS AND IN ISRAEL ACCORDING TO PLACE OF BIRTH AND PERIOD OF IMMIGRATION (PERCENTAGES)

Settlement	1961 - born in:			1967 - born in:			1972 - born in:		
	Israel	Abroad		Israel	Abroad		Israel	Abroad	
		<1947	>1948		<1947	>1948		<1947	>1948
Total Israeli Population	37.8	16.6	45.6	42.8	12.0	45.2	46.8	10.3	42.9
Dimona	23.7	1.4	74.9	23.0	0.9	76.1	36.4	0.7	62.9
Yerucham	18.4	0.7	80.9	19.0	0.5	80.5	37.0	-	63.0
Kiryat Shemona	27.8	1.5	70.7	30.9	0.9	68.2	45.5	1.8	52.7
Or-Akiva	21.0	0.3	78.7	21.8	0.2	78.0	35.8	0.4	63.8
Yavne	30.1	0.5	69.4	34.0	2.0	62.0	43.1	0.6	56.3
Yokneam	35.4	7.4	57.2				42.4	1.1	56.5
Afula	33.7	7.8	58.5	34.0	5.3	60.7	44.2	8.1	67.7
Beer-Sheva	31.6	3.8	64.6	33.9	2.7	63.4	43.3	2.2	54.5
Kiryat-Gat	21.5	2.5	76.0	24.8	1.4	73.8	37.6	1.9	60.5
Arad	n.a.	n.a.	n.a.				55.5	10.6	33.9
Carmiel	n.a.	n.a.	n.a.				42.6	5.9	51.5

Source: C.B.S., The Settlements of Israel, publication no. 18 (Vol. IV), table no. VI.

modernization. This fact has strongly influenced the development of the new towns. As experience in Israel and elsewhere has shown, those originating in backward countries have a need of a lengthy period of adjustment to modern technology and to modern patterns of social life and family structure (Berler, 1970).

From table 4.5 one can see that the first group of the development towns--the small and remote ones--have the highest rate of Asian- and African-born residents (higher than 81 percent). (The only town which does not belong to this group, and has a similar characteristic, is Yavne). This phenomenon can be explained in two ways: 1) the waves of immigration from Asia and Africa in the mid-fifties have created these towns. 2) These towns have experienced a high rate of outmigration. The stronger groups of population--those from Europe and America tend to leave the towns first.

The immigrants from Asian and African countries are characterized by a high birth rate. Consequently, the development towns are characterized by large families. The average family size in the development towns far exceeds that in the older cities. The average size of a Jewish family in Israel was in 1972--3.6 persons per family, while the sizes in the development towns were between 4.1 and 5.1 persons per family (see table 4.6).

TABLE 4.5

IMMIGRANTS IN SELECTED DEVELOPMENT TOWNS BY COUNTRY OF ORIGIN (PERCENTAGE)

Settlement	Country of Origin					
	Asian and African born			European and American born		
	1961	1967	1972	1961	1967	1972
Total Jewish Population	43	48	46.7	57	52	53.3
New Towns		70.7			29.3	
Dimona	85	83.8	81.9	15	16.2	18.1
Yerucham	82.1	90.4	91.8	17.9	9.6	8.2
Kiryat Shemona	78.0	83.6	82.8	22.0	16.4	17.2
Or-Akiva	70.9	73.4	74.6	29.1	26.6	25.4
Yavne	82.0		90.9	18.0		9.1
Yokneam	54.8		69.6	45.2		30.4
Afula	52.8	61.9	61.2	47.2	38.1	38.8
Beer-Sheva	60.8	67.7	66	29.2	32.3	34
Kiryat-Gat	63.6	74.8	75.9	36.3	25.2	24.2
Arad	n.a.		63.9	n.a.		36.1
Carmiel	n.a.		68.5	n.a.		31.5

Note: For each year, all foreign born in a town totals 100%.

Source: Berler, 1970, Table App. III-3, p. 76; C.B.S., The Yearly Statistical Book, Vol. 25, 1974.

TABLE 4.6

SIZE OF FAMILIES--AVERAGE NUMBER OF PERSONS PER HOUSEHOLD IN THE SELECTED DEVELOPMENT TOWNS

Settlement	Year	
	1961	1972
Total Israeli Population	3.8	3.6
Urban Communities		3.8
Dimona	4.6	4.5
Yerucham	4.8	5.1
Kiryat Shemona	4.7	4.7
Or-Akiva	4.1	4.3
Yavne	4.8	4.8
Yokneam	4.0	
Afula	4.1	4.1
Beer-Sheva	4.3	4.2
Kiryat Gat	4.3	4.4
Arad	n.a.	
Carmiel	n.a.	

Source: For 1961--C.B.S., The Settlements of Israel, Vol. IV, publication no. 18, Table no. VI, 1966.

For 1972--C.B.S., Yearly Statistical Book, Vol. 25, 1974.

The high percentage of large families in the development towns creates serious problems. The burdens weighing on a large family are heavy. The number of breadwinners in such a family is relatively small in comparison with the number of non-working dependents.

Among the eleven development towns in table 4.6, Yerucham and Dimona are quite outstanding in the average size of their families--4.5 and 5.1 respectively. The same is true for Kiryat-Shemona and Yavne.

Due to the high percentage of large families and the high birth rate, the percentage of children under the age of fourteen is very high in the development towns (see table 4.7). The percentage of children under the age of fourteen is 40 percent-45 percent in the development towns and only 30 percent-35 percent in the older and more established towns.

As in the case of the average size of the families (table 4.6), Yerucham, Dimona and Yavne have the highest percentage of children under fourteen years of age. This is another indication for the lower income level per capita and high rate of poverty.

Another important socioeconomic indicator is the level of schooling table 4.8 lacks data for years other than 1961, and therefore it is impossible to find out to what extent the level of education has increased. From the data in 1961 it is obvious that the level of education in the

TABLE 4.7

THE PERCENTAGE OF CHILDREN UNDER 14 YEARS OF AGE IN DEVELOPMENT TOWNS

Settlement	Year			
	1961	1967	1973	1978
Total Israeli Population	36.1		32.8	
Dimona	45.8	42.9	39.4	38.3
Yerucham	47.5	46.1	41.9	40.4
Kiryat Shemona	46.0	45.0	37.8	36.5
Or-Akiva	41.1	39.1	35.9	34.7
Yavne	47.8		39.0	37.9
Yokneam	40.2		34.9	
Afula	41.0	38.0	20.6	31.2
Beer-Sheva	42.8	40.4	34.6	32.2
Kiryat-Gat	43.3	42.1	36.3	33.6
Arad	n.a.		37.6	36.6
Carmiel	n.a.		34.2	35.9

Source: Ministry of Labor and Social Affairs, Social Profile of Cities and Towns in Israel, Jerusalem, December, 1979.

non-metropolitan towns was lower, at the initial stages of development, than in any other development town (except for Yavne).

Tables 4.9 and 4.10 give more indication towards the economic status and the standard of living in the towns.

Table 4.9[3] shows quite clearly that the first group of towns consists of the poorest communities, while the last two groups are richer.

Table 4.10 indicates rate of motorization and presents similar picture as table 4.9. The towns in the first group have the lowest rate of motorization.

Tables 4.11, 4.12, 4.13 describe the employment situation in the development towns.

Table 4.11 presents the labor-force participation rate. It is high among males and very low among females. The highest rate of labor participation is among those living in the non-metropolitan industrial towns since due to the town's small size and the strong governmental commitment towards their inhabitants a situation was created in which the local employment agency takes care of each person individually. The lower rate of female participation is caused by the reluctance of women to work during child-bearing years and by the lack of available jobs for

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[3] In table 4.9 a comparison should not be made across years since the high rate of inflation was not taken into account. The only way to look at this table is to compare at the same year between towns.

TABLE 4.8

POPULATION AGED 14 YEARS OF AGE AND OVER,
MEDIAN YEAR OF STUDY: 1961

Settlement	Total	Males	Females
Total Israeli Population	8.3	8.6	7.9
Dimona	6.8	7.2	6.1
Yerucham	4.2	5.9	0.9
Kiryat-Shemona	5.9		4.9
Or-Akiva	5.0	6.0	3.6
Yavne	3.8	5.2	1.0
Yokneam	7.4	8.4	5.9
Afula	7.7	8.1	
Beer-Sheva	7.7	8.0	7.3
Kiryat-Gat	7.1	7.7	7.0
Arad	n.a.	n.a.	n.a.
Carmiel	n.a.	n.a.	n.a.

Source: C.B.S., The Settlements of Israel, Vol. IV, publication no. 18, Table no. XIII, 1966.

TABLE 4.9

AVERAGE INCOME FROM LOCAL TAXES PER CAPITA (IL)

Settlement	Year				
	1973	1974	1975	1976	1977
Total Israeli Population	403	311	772	987	
Dimona	93	100	202	248	443
Yerucham	97	82	258	257	
Kiryat Shemona	88	116	245	350	671
Or-Akiva	76	79	123	184	363
Yavne	94	151	269	444	538
Yokneam					
Afula	186	179	507	597	859
Beer-Sheva	199	233	460	658	1040
Kiryat-Gat	134	156	332	496	709
Arad	229	191	580	642	887
Carmiel	150	150	389	645	910

Source: Ministry of Labor and Social Affairs, Social Profile of Cities and Towns in Israel, December 1979.

women.

Table 4.12 points to a striking phenomenon, the rate of those employed in industry is the highest in those towns which belong to the first two groups of small towns. The main explanation for this may be found in the governmental policy, which has directed a large share of its industrial investment into the small development towns. The small towns, close to the metropolitan centers like Yavne and Yokneam have a high rate of employed in the industry also because the residents work in the industrial plants in the metropolitan areas. The towns have not developed yet a strong service center due to their reliance on the services provided by the central cities.

Another index for examining the economic structure of the development towns is the precentage of the population employed in services. It is assumed that the level of services increases as the town grows and the level of services needed becomes high. In effect the data in table 4.12 demonstrates a clear tendency towards expansion of the service sector as the town grows.

The third table (4.13) shows a static picture (as a result of lack of data for other years) of the occupational structure of the development towns. It is clear that the small towns (both groups) are lagging behind the bigger cities and the rest of the country as a whole in the number of professionals residing in these communities. Almost half

TABLE 4.10

MOTOR VEHICLES PER 1000 POPULATION

Settlement	Year					
	1973	1974	1975	1976	1977	1978
Total Israeli Population	88	113.3	125.6	126.4	127.2	115.5
Dimona	28.8	31.8	36.2	37.3	39.1	43.5
Yerucham	18.3	18.1	21.3	22.5	23.5	24.8
Kiryat-Shemona	46.1	52.3	64.3	68.4	73.5	72.6
Or-Akiva	26.8	31.1	37.3	39.7	36.6	36.9
Yavne		50.7	58.6	61.3	67.9	68.7
Yokneam						
Afula	69.9	74.8	82.7	85.1	86.2	91.8
Beer-Sheva	82.8	93.2	103.6	105.7	107.8	111.9
Kiryat-Gat	51.3	57.1	68.2	68.3	70.2	69.5
Arad	100.3	100.5	114.8	107.8	105.9	113.3
Carmiel	85.1	92.8	105.7	98.6	99.7	102.3

Source: Ministry of Labor and Social Affairs, Social Profile of Cities and Towns in Israel, Jerusalem, December 1979.

TABLE 4.11

POPULATION BY SETTLEMENT AND BY LABOR-FORCE PARTICIPATION RATE

Settlement	Labor-Force Participation Rate - 1961		
	Total	Males	Females
Total Israeli Population	53.5	77.5	29.3
Dimona	53.0	82.1	21.6
Yerucham	57.0	80.2	32.5
Kiryat-Shemona	50.6	78.0	21.3
Or-Akiva	46.4	72.1	22.1
Yavne	49.0	76.6	20.4
Yokneam	56.3	80.1	33.3
Afula	53.4	78.4	28.8
Beer-Sheva	53.0	80.0	26.0
Kiryat-Gat	52.9	78.4	25.5
Arad	n.a.	n.a.	n.a.
Carmiel	n.a.	n.a.	n.a.

Source: C.B.S., The Settlements of Israel, Vol. IV, publication no. 18, table XIII, 1966.

of their inhabitants are skilled and semi-skilled workers employed in industry.

The last three tables emphasize the important role industry plays in the remote-industrial development towns.

Summary and Conclusions

The socio-demographic data on the small industrial towns like: high rate of immigrants, majority of residents who were born in Asian-African countries, large families--four and five children per family and low level of education, all help in explaining why there are problems, rather than describing the results--"how well are those towns doing?" The few economic indicators can partially explain what were, relatively to the rest of the country, the actual achievements.

This partial description of the situation lays the ground for understanding the people's perceptions of the remote industrial towns as "islands."

It is quite clear that some small towns, close to the metropolitan share the same characteristics (Yavne and Or-Akiva have similar features like Kiryat-Shemona, Dimona and Yerucham, as well as some other towns like Maalot and Hatzor which were not described here), but apparently their physical closeness to the metropolitan centers eliminates the subjective feelings of isolation--an issue which will be discussed in the third part of this chapter. These close

TABLE 4.12

EMPLOYED PERSONS BY ECONOMIC BRANCH

Settlement	Year and Economic Branch								
	1961					1973			
	Agriculture	Manufacturing - Mining	Construction	Services	Unknown	Agriculture	Manufacturing - Mining	Construction	Services
Total Israeli Population	14.1	24.7				6.8	85.0	7.7	60.5
Development Towns	10.4	25.4	14.3	46.1	3.8	6.1	42.8	11.9	38.9
Dimona	1.0	48.0	16.5	29.8	3.2	0.7	55.5	6.4	37.4
Yerucham	8.1	25.7				-	65.3	5.0	29.7
Kiryat-Shemona	29.5	18.1	17.0	30.6	4.8	11.4	52.2	11.4	25.0
Or-Akiva	9.7	34.9							
Yavne	23.5	11.6	20.0	39.0	5.9	4.1	83.5	3.5	8.8
Yokneam	22.7	42.6				-	65.3	5.0	29.7
Afula	8.1	25.5	14.3	48.9	3.2	4.5	42.2	8.1	45.2
Beer-Sheva	3.2	20.6	19.4	51.9	4.7	4.2	37.5	8.3	50.0
Kiryat-Gat	16.6	38.0	8.8	33.3	3.3	7.5	56.1	9.1	27.3
Arad	n.a.	n.a.	n.a.	n.a.	n.a.	-	44.2	5.2	50.7
Carmiel	n.a.	n.a.	n.a.	n.a.	n.a.				

Sources: For 1961--C.B.S., The Settlements of Israel, IV, publication no. 18, table XIII, 1966.
For 1973--Ministry of Labor, Survey of Cities and Development Towns, 1973.

TABLE 4.13

EMPLOYED PERSONS (AGE 14+) BY OCCUPATION

Settlement	Occupation								
	Scientific and Academic Workers	Other Professional, Technical and Related	Administrators and Managers	Clerical and Related Workers	Sales Workers	Service Workers	Agricultural Workers	Skilled Workers in Industry	Other Workers in Industry, Transportation
Total Israeli Population	5.7	10.9	3.1	15.3	8.3	12.6	7.8	29.8	6.5
Dimona	1.8	8.8	2.3	12.1	4.6	14.3	1.9	47.9	6.2
Yerucham	-	8.6	2.9	7.4	2.0	26.6	2.9	36.1	13.5
Kiryat-Shemona	1.8	8.3	1.3	8.7	5.3	12.0	8.3	42.5	11.6
Or-Akiva									
Yavne	1.1	4.2	-	9.7	3.8	19.0	6.6	45.7	9.9
Yokneam	1.5	8.2	1.5	10.4	6.7	19.4	3.0	44.0	5.2
Afula	2.4	10.2	1.1	13.2	7.8	16.5	4.8	35.3	8.7
Beer-Sheva	6.3	15.7	2.1	15.4	7.6	12.0	1.5	32.5	6.8
Kiryat-Gat	1.8	8.3	1.3	8.7	5.3	12.0	8.3	42.5	11.6
Arad	6.0	18.8	0.6	13.1	4.8	16.5	1.4	32.1	6.8
Carmiel	2.1	16.6	5.1	11.9	4.7	13.6	1.7	34.9	9.4

Source: C.B.S., Statistical Abstracts of Israel, Table XII/16, Jerusalem, 1978.

and small industrial towns may experience a different problem, e.g., that of sharp differences between them and the neighboring affluent communities, but the impact and the results of this situation is of a different nature compared to the situation in the remote towns.

Except for the distance, the size of the town may be found to play an important role as well. Dimona is a remote industrial town, but its size (27,300 inhabitants in 1978) gives the town some strength which the small towns lack. Data on population growth as well as other indicators of achievements (level of motorization, local taxes, etc.) show that among the small remote industrial towns, the bigger ones are better off.

4.2. The Industrial and the Employment Perspective

The "island phenomenon" is a situation which is not confined solely to the socioeconomic structure of the communities in the development towns, but also prevails in the industrial and employment areas. More specifically, this chapter will try to show that the industrial structure of the remote non-metropolitan industrial towns is different from this in the central regions. This difference can be described as a situation in which the industrial structure of the development towns carries characteristics of the industrial structure in developing countries in a country

with well-developed industrial structure--and therefore resembles an "island phenomenon."

Regional differences may be a result of regional specializaiton based on different relative advantages of each region, but in the case of the remote industrial development towns, the differences are not due only to these relative advantages (for example, industries based on quarrying and mining) but also as a result of historical-social-economic cirsumstances and developments which this study will dwell on in the following chapters. In this chapter, the situation as it prevails today will be described.

The dispersion of the industrial employment has been one of the central objectives of the development policy of the government. The main instrument used was providing financial incentives for private investment coupled with a free industrial infrastructure. As a result of more than two decades of industrialization policy, the share of the workers in the industrial sector in the development regions has increased significantly. In the subdistrict of the Kinneret it increased from 12 percent in 1965 to 20 percent in 1977, in Yizrael it increased from 14 percent to 25 percent, in Beer-Sheva it increased from 18 percent to 21 percent (Beer-Sheva has started with a high rate of employment in industry), and in the country as a whole it

has increased from 21 percent to 24 percent (see table 4.14).

Table 4.12 (in the previous section), demonstrates the high rate of the employed in the industry in eleven development towns. The most outstanding employment characteristics of the development towns are: a) A sharp increase in the rate of the employed in industry. For example, in Yerucham it has increased from 25.7 percent in 1961 to 65.3 percent, and in Kiryat-Shemona from 18.1 percent to 52.2 percent. b) The small share of the employed in the service sector. Spiegel claims that this is a result of the nature of the development process:

> Service industries, as secondary or even tertiary steps in the economic process, can hardly be systematically encouraged during the development period of a new town, with the exception perhaps of tourism which, however, is restricted to very few places. (Spiegel 1966)

Inspite of the fact that the share of the employed in industry in the development regions has increased in absolute terms, it still lags behind the share of the central regions.

Table 4.15 shows that the shore of the employed in industry in the central regions has decreased from 82 percent in 1961 to 69 percent in 1978, while it has increased in the development regions from 18 percent to 51.1 percent. But, table 4.16 reveals that the increase is lagging behind the increase in the population. Though the

TABLE 4.14

THE PERCENTAGE OF THE INDUSTRIAL WORKERS IN THE LABOR FORCE BY REGIONS AND SETTLEMENTS

Settlement	Year		
	1965	1971	1977
Israel - Total	21	22	24
Kneret	11	12	20
Akko	12	17	24
Zefat	13	20	16
Yizreel	14	20	25
Rehovot	14	16	25
Hasharon	14	15	24
Jerusalem	15	12	13
Hadera	17	22	20
Beer-Sheva	18	21	21
Ashkelon	23	30	28
Haifa	25	25	23
Tel Aviv	25	23	26
Petah Tikva	26	27	30
Ramla	29	58	40

data in table 4.15 covers only the years 1961-1967, it is apparent that in the years 1961-1964 in which extensive industrialization policies have been implemented the increase in the total industrial employment (as it is demonstrated by the increase in the share of the employed in industry in the development towns) has outpaced the increase in the total population (as it is demonstrated by the increase in the share of the population in the development towns). But since 1967--the beginning of the recession period--the situation has changed: The share of the population in development towns has been 14.1 percent while their share in the total industrial employment has been only 12.7 percent (see table 4.16).

Table 4.17 emphasizes the process that was described in table 4.16. The share of investment in industry in the development regions has decreased since 1963. It was 41.9 percent of the total gross investment in 1963, and in 1966 it consisted only of 39.8 percent of the total investment.

The regional distribution of investment in fixed assets has not changed much since 1961 except for Jerusalem that has gained priority in the allocation of resources since the 1967 War (see table 4.18).

From the data on the major characteristics of the industries in the development regions, it is quite apparent that there is a high centralization of specific industries in these regions. These industries are capital intensive,

TABLE 4.15

THE DISTRIBUTION OF EMPLOYEES IN INDUSTRY, IN THE CENTRAL AND DEVELOPMENT REGIONS

Region	Year			
	1961	1965	1971	1978
Total (thousands)	154.6	188.9	229.6	308.0
Total (percentage)	100%	100%	100%	100%
Total: Central Regions	82.0	78.0	73.5	69.0
from these: Tel Aviv	45.5	42.4	33.3	32.5
Haifa	19.1	15.2	13.0	11.4
Total: Development Regions	18.0	22.0	26.5	31.0
from these: Jerusalem	5.7	5.7	5.2	6.0
Beer-Sheva		3.9	4.7	5.6

Source: Gradus and Einy, 1981, Table no. 1, p. 3.
C.B.S., Industry and Craft Survey, Special Series, 178, 1961.

TABLE 4.16

THE SHARE OF THE DEVELOPMENT TOWNS IN THE POPULATION AND THE INDUSTRIAL EMPLOYMENT, 1961-1967

	Share of Development Towns in:					
	Total Population (%)			Total Industrial Employment (%)		
	1961	1964	1967	1961	1964	1967
Development Towns	10.8	14.2	14.1	11.4	16.2	12.7
The Rest of the Country	89.2	85.8	85.9	88.6	83.8	87.3
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: Berler, 1970, Tables no. III-32, III-33, pp. 113-114.

TABLE 4.17

POPULATION INCREASE AND GROSS INVESTMENT BY DISTRICT, 1963-1960

District	Year							
	1963		1964		1965		1966	
	Population Increase	Total Gross Investment	Population Increase	Total Gross Investment	Population Increase	Total Gross Investment	Population Increase	Total Gross Investment
	000s	IL.M	000s	IL.M	000s	IL.M	000s	IL.M
Israel - Total	98.3	1,964.7	95.5	2,366.1	72.8	2,605.7	59.0	2,186.3
Percentage	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Development District (total)	52.1	41.9	44.5	40.0	42.3	38.7	40.4	39.8
Jerusalem	7.3	7.1	7.7	7.2	6.7	7.4	7.4	8.5
Northern	19.2	16.6	15.7	13.4	14.6	13.7	15.2	14.8
Southern	25.6	18.2	21.1	19.4	21.0	17.6	17.8	16.5
Coastal Districts (Haifa, Central, Tel Aviv)	47.9	58.1	55.5	60.0	57.7	61.3	59.6	60.1

Source: Lichfield, 1971, Vol. II, Table 5.3.6.

big in size, they have lower rate of professional and skilled workers, lower rate of expenditure on research and development (R&D), and their employees earn lower wages compared to employees in the industrial plants in the central subdistricts.

In the rest of this chapter this issue will be further analyzed.

4.2.1. The Structure of the Industries

The branch structure in the development towns differs from that in the country as a whole (see table 4.19). In the development towns the food, textile, non-metalic minerals (due to the town's location) and basic metal industries are well represented while the clothing, plastics, machinery and equipment, electrical and electronic, and transport equipment industries are almost non-existent. The industries which are poorly represented are those which require highly skilled and well-trained labor, and where the distance from marketing outlets constitutes a limiting factor (printing and publishing paper, cardboard and their products and the like).

There is a clear predominance of the textile industry, accounting for 34.2 percent of all employers, 37.8 percent of the invested capital and 47.5 percent of public loans (Spiegel, 1966). The labor intensity, the short

TABLE 4.18

NET INVESTMENT IN FIXED ASSETS

Subdistrict	Year	
	1961	1976
Total	100%	100%
Jerusalem (including city)	2.5	6.3
Northern Subdistrict	18.6	18.2
Haifa (city)	11.9	14.0
Haifa Subdistrict	10.4	4.9
Central Subdistrict	16.6	17.8
Tel-Aviv (city)	7.7	14.8
Tel-Aviv Subdistrict	8.9	
Southern Subdistrict	23.2	23.9

Source: C.B.S., Industry and Crafts Survey, Special Series, 178, 1966.

Gradus and Einy, 1981, Table 6.

training period, the easy construction of the plants made it seem particularly suitable for combating unemployment in the development towns.

In eleven of the twenty-eight new towns, textile factories are the largest (and often the only large) source of employment: in the north in Kiryat-Shemona, Zefat, Afula, Beit-Sheán; in the centre, Or-Akiva; in the south, Ashdad, Airyat-Gat, Netivat, Ofakim, Beer-Sheva and Dimona. (This was particularly true for the first decade of industrialization: 1955-1965.)

In the 70's the textile and clothing industry is still the largest branch in the Israeli industry, though the number of employees has not changed since the 1960s. In 1979 the textile and clothing branch employed 50,000 employees (approximately 18 percent of the total). In the 70's a fundamental change has taken place in the industry itself: the weight of the clothing branches has increased from 35 percent (number of employees in clothing out of the total) in 1969/70 to 57 percent in 1976. The same trends can be seen in the share of the amount of product and in the total numbers of approved investments. This change is a result of governmental policy as a response to the unbalanced structure of the branch. Second in importance is the food industry, often based on indigenous if not local products, and exemplified by the big sugar factories in Afula and Qiryat Gat and the large bakeries which are found

TABLE 4.19

DISTRIBUTION OF THE SHARE OF THE MANUFACTURING BRANCHES
IN ISRAEL AND IN THE DEVELOPMENT REGIONS
(BY PERCENTAGE OF NUMBER OF EMPLOYED PERSONS)

Branch	Year				
	1961	1965		1971	1978
		I	II		
1. Quarrying and Mining					
Israel	2.0	2.2		1.9	1.4
Development Regions	5.4				
2. Foodstuffs					
Israel	14.8	15.6	15.1	14.5	13.1
Development Regions	18.0		14.7		
3. Textiles, Clothing, Leather					
Israel	24.7	21.4	20.0	20.8	20.3
Development Regions	35.1		36.4		
4. Wood, Paper, Printing					
Israel	6.3	12.6	14.5	10.4	11.3
Development Regions	3.4		10.9		
5. Rubber, Chemicals, Non-metalic Minerals					
Israel	~14.4	14.2	13.8	16.9	11.6
Development Regions	~18.2		18.6		

TABLE 4.19--Cont.

Branch	Year				
	1961	1965 I	1965 II	1971	1978
6. Basic Metals, Metal Products					
Israel	10.8	12.0	10.0	13.5	16.3
Development Regions	4.9		8.4		
7. Machinery, Electrical Products					
Israel	8.2	10.0		12.4	12.6
Development Regions	5.2				
			19.9		
8. Transport Equipment			8.4		
Israel	10.1	6.3		8.3	7.6
Development Regions	4.0				
9. Diamonds					
Israel	3.8	1.7	4.6	2.0	2.3
Development Regions	4.4		2.4		
10. Miscellaneous					
Israel	2.0	4.0	2.1	3.5	2.8
Development Regions	1.4		0.2		
TOTAL: Israel	100%	100%		100%	100%
Development Regions	100%	100%		100%	100%

TABLE 4.19--Cont.

Sources: For 1961--C.B.S., Industry and Crafts Survey, 1961, Special Series, no. 178. Development regions are defined as: Jerusalem (including the city), Northern region,, Southern region.

For 1965--Industry and Crafts Survey, 1974, Special Series, no. 446. Spiegel, 1966, p. 52. (The 100 percent does not include quarrying and mining.)

For 1971--Industry and Crafts Survey, 1974, Special Series, no. 446, Jerusalem, 1974.

For 1978--Gradus and Einy, 1981, Table no. 5.

everywhere. Most of these, however, offer only seasonal employment.

In the 1960s, equally widely scattered were the manufacture of building materials which accounted for almost twice as much employment as on the national average. With some exceptions, the industry supplied local needs.

Since 1969-1970, there has been a drastic change in the directions of the industrialization policies. In those years, the rate of investment in textile, clothing and leather went down to 6 percent in development regions and 16 percent in the country as a whole. The rate of investment in basic metal went up in the development regions to 45 percent and to 35 percent in the whole country.

4.2.2. Capital Intensity

The capital intensity in the industrial plants in development regions is higher on average compared to the rest of the country.

In 1975, the capital per employees (thousands of IL in 1975 prices) was 96.2 in the development regions and 73.7 in the central regions in the textile branch. In quarrying and mining it was 486.2 and 231.3 respectively. In metal and electronic it was 92.3 and 84.2 respectively, and in the industry in general it was 139.2 and 100.2 respectively (Ministry of Industry, Commerce and Tourism, 1977, p. 169).

In general capital per employee in 1969 was higher in 87 percent of the development regions in comparison to the central subdistricts. Since then, the difference has been narrowed. In 1972 it was 68 percent and in 1978 it was 56 percent.

4.2.3. Size of the Plants

Comparatively, large firms are found more frequently in the new towns than in the rest of the country: 8.7 percent of all businesses had one hundred or more employees as against 2.7 percent on the national average (see table 4.20).

This is partly due to the general efforts to assist primarily big enterprises which soon make a noticeable difference to the labor market. Moreover, big industries owned by the state or public companies or by potent overseas investors, with greater technical, organizational and financial backing behind them, find it easier to hold their own in the development regions.

Among the industries in the development towns, the textile industry is characterized by high centralization. According to 1975 data, 70 percent of the textile firms employ less than twenty workers each (12 percent of the total number of employees in the textile industry) and only 5 percent of the firms employ more than three hundred

TABLE 4.20

"APPROVED ENTERPRISES" IN INDUSTRY AND CRAFTS IN NEW-TOWNS
BY NUMBERS OF EMPLOYED PERSONS (1964)

# of Employed Persons	New-Towns				Israel-Total			
	Enterprises		Employed Persons		Enterprises		Employed Persons	
	Absolute #	%	Absolute #	%	Absolute #	%	Absolute #	%
1-4	280	38.0	634	2.3	4,604	44.1	13,963	7.8
5-9	141	19.2	885	3.2	2,789	26.7	18,695	10.4
10-24	132	17.9	1,984	7.2	1,690	16.2	26,449	14.9
25-49	74	10.1	2,495	9.1	750	7.2	25,062	14.1
50-99	45	6.1	3,119	11.4	326	3.1	22,252	12.5
100-299	39	5.3	6,562	23.9	198	2.0	33,416	18.7
300+	25	3.4	11,800	42.9	73	0.7	38,471	21.6
Total	736	100	27,479	100	10,430	100	178,308	100

employees each and represent 49 percent of the total employed in the textile branch.

In a study on "The impact of factory size on urban growth and development," it was found that: ". . . Medium size manufacturing plants, achieving increasing scale economies by a disintegrated production process within the urban economy, are more favorable for urban growth than larger plants" (Kipnis, 1976, p. 295).

4.2.4. Other Characteristics of the Industries

Table 4.21 demonstrates other characteristics which distinguish between the industries in the central regions and those in the development regions. (The data is based on the study by Gradus and Einy, 1981).

Industries in the central regions enjoy high share of value added (the share of value added indicates the ability of the industry to compete and to export). The rate of professionals in industries in the central regions is higher in comparison to their rate in the development regions. The same is true for the expenditure on research and development (R&D) which is an indicator of the extent to which the industry is a high technolgy one. The last column in table 4.21 shows the differences in salaries and wages between the various industries, and the gaps between the regions. The workers in the plants in the central regions

TABLE 4.21

CHARACTERISTICS OF THE MAJOR INDUSTRIAL BRANCHES IN THE CENTRAL AND DEVELOPMENT REGIONS

Region	Year			
	(1) 1971-1976	(2) 1975-1976	(3) 1976	(4) 1978
Central Regions:				
Machinery	+11	6.5	5.9	+12.5
Electricity and Electronics	+ 3	45.9	40.2	+15.3
Transport Equipment	+31	11.2	21.5	+65.3
Printing and Publishing	+ 9	0.2	0.5	- 7.2
Development Regions:				
Foodstuffs	-25	4.2	2.4	-22.3
Textile	0	2.1	1.2	-14.8
Wood	+ 7	1.5	2.5	-21.0
Rubber and Plastics	-21	3.0	2.9	-11.0
Chemicals and Oil Products	-13	22.9	20.7	+22.7
Metal Products	+ 8	2.5	2.2	+ 8.1

(1) Change in value added--the deviation from the growth of the whole industry (percentage).

(2) The percentage of professionals out of the total number of professionals in the whole industry.

(3) Percentage of expenditure on R&D out of the total expenditure on R&D in the whole industry.

(4) Average salary per man-day worked--deviation from the average in the whole industry (in percentage)

TABLE 4.21--Cont.

Sources: C.B.S., Industry and Crafts Survey 1976, Special Series, no. 607.

C.B.S., Industry and Crafts Survey 1971, Special Series, no. 446.

C.B.S., Industrial Research and Development Survey 1972/74/75, Special Series, no. 581.

(except for the workers in the printing and publishing branch) enjoy higher wages and salaries compared to their counterparts in the development regions (except for the workers in the chemicals and oil products plants, and those in the metal products).

Summary

Over the last twenty-five years Israel has invested a large amount of capital and human resources to industrialize the development regions. Consequently, the level of industrialization increased significantly, measured by the number of employees. Moreover, the policy had succeeded in dispersing industrial plants all over the country.

Nevertheless, while the process of industrialization continues in the development areas, an important trend is becoming apparent--the formation of two distinct groups of manufacturing branches, the "growth" and the "laggard" branches (a definition by Estall, 1972--based on growth and sophistication criteria). Recent study on the process of industrialization in the 1960s and 1970s (Gradus and Krakover, 1977) showed thet the growth branches are predominant in the centrally located areas, among them: electronics, transportation, pharmaceuticals, metal and machinery, while the laggard branches are predominant in the

development areas, among them: textiles, leather and food. Though this dichotomy should be studied more carefully, it is hypothesized that the type of the industrial structure has various effects on the communities and their labor force. Moreover, this dichotomy alludes to the existence of a "dual market" in the country's employment structure.

Underlying the development of the dual labor market lies a sharp split between two different kinds of working situations: one kind of working experience involves what is called "primary labor process," the other involves the "secondary labor process." Work is organized in different ways in the two processes. The primary labor process is structured internally, there are job ladders, promotional channels, customary practices, a variety of jobs, high wages, employment stability and job security. The secondary labor process is unstructured, there are no job ladders, few opportunities for promotion, unpredictable working relationships, primitive equipment, little variety in the range of jobs available and uniformly low wages (Piore, in Gordon 1977, p. 93).

In terms of the dual market theory the industries in the central parts of the country belong mainly to the "primary market," while most of the industries in the development regions (except for quarrying and mining plants and several others) belong to the "secondary market." The effect of each type of industry on the labor force and on

the development of the community will be further examined in the following chapters.

A follow up on the 1978 study (Gradus and Einy, 1981) found that the trend of bridging the industrial gap (measured by the number of employees) between the center and the periphery has been slowed down over the last decade and actually has almost stopped. The level of industrialization in the southern part of the country has decreased.

4.3. The Subjective Perception of the Phenomenon

The existence of the "island phenomenon" was described so far, using objective measures (socioeconomic statistical data and industrial measures) which highlight the distinct characteristics of the non-metropolitan industrial development towns in comparison with the metropolitan towns. It is hypothesized (as will be discussed later) that the phenomenon is the result of given circumstances coupled with various policies and developments. However, it is suggested that a major factor in the creation of this phenomenon is the remoteness and seclusion--both in its physical and mental senses--of these towns. This factor strengthens the community's negative self-image that the community is different in the demographic and social structure of its population, its economic base and therefore in its performances and future perspectives.

A negative image may become a self-fulling prophecy, i.e., the way the community perceives itself, has an impact on its performance. Moreover, various outsiders (i.e., officials on the regional and national levels, managers of local plants, and residents in other communities) dealing with this community may adopt--without much inquiry--the image reflected by the community which then reinforces the negative image.

The purpose of this chapter is to describe the "island phenomenon" from its third angle--the subjective feelings of being a part of an "island." The chapter will consist of three parts:[4]

1. The physical distance.
2. Realities and policies stemming from the distance.
3. Subjective feelings of the "island phenomenon."

4.3.1. The Physical Distance

Yerucham is located some 56 km. from Beer-Sheva (via Dimona), and Dimona is located some 41 km. from Beer-Sheva. The center of the region--Beer-Sheva itself, is 120 km. apart from the main metropolitan center of the country, Tel-Aviv (see map 3.1 in chapter III).

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[4]This chapter concentrates on the "island phenomenon" which manifested itself in interviews with local residents as well as with "outsiders." Some examples will be brought from Dimona, although Yerucham serves as a better example of the physical remoteness.

Until the 1960s the main road from Beer-Sheva to the southern town of Eilat passed near Yerucham. Since then, a new road was paved-- passing through Dimona and the Arava Valley. The old road--so-called the "oil road" connecting to the old main road was abandoned and since then deteriorated. A veteran citizen claims: "The place was overpassed by the new road."[5]

Recently, as a result of the resettling of the army camps in Negev, there are discussions regarding the reopening of the road. There is a sharp debate in the town concerning this issue which illustrates clearly the importance not solely of the distance itself, but the realities and policies built on the physical fact.

The proponents of the reopening (mainly officials) are very enthusiastic. They claim that this old road will shorten the distance between Beer-Sheva and Yerucham and therefore will help in integrating the town into the regional labor market. Workers from Yerucham will be able to look for jobs in the new industrial park of Ramot-Chovav, new employees from Ramot-Chavav will settle in Yerucham, and it will be more convenient for the local inhabitants to do their major shopping in Beer-Sheva.

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[5]All quotations, unless differently noted, came from the interviews with local residents of the communities.

The opponents--among them the head of the local Histadrut (labor union) branch and the secretary of the local labor party--claim that is it a "two-way road": workers may continue working in Yerucham but will find it more convenient to live in Beer-Sheva, since it is a more developed town and the distance is shorter. Moreover, they point to the fact that the plants in the new industrial park in Ramat-Chovav, have already begun hiring workers from Beer-Sheva and Dimona, and once the road is opened there will not be any available vacancies for the Yerucham workers.

Another group is quite skeptical (among them the head of the local employment agency) and dismiss the significance of the physical mean. The group argues that the opening of the road itself will not change a situation which is not the result of the physical distance but rather the outcome of various policies and regulations like: the regional employment policy, transportation arrangements, etc. The next chapter will elaborate on this issue.

4.3.2. Realities and Policies Stemming from Distance

The physical distance itself, is not the sole factor in creating the feelings of living in an "island." It is the low rate of accessibility (transportation, communication systems, etc.) and the distorted system--the result of the

development of bureaucratic and administrative arrangements and regulations--which further hinder mobility and free access to and within the region.

There are three issues which highlight this reality which has evolved due to the physical distance: private transportation, public transportation, and the commuting-to-work system.

Private Transportation

The rate of motor vehicles per 1000 population was in Yerucham 24.8 in 1978 which has gradually grown from 18.3 in 1973 (see table 4.10, "Motor Vehicles per 1000 Population").

In comparison to the national averages (88.0 in 1973 and 115.5 in 1978) and to other development towns, Yerucham's rate of private transportation is one of the lowest in the country.

The low rate of private transportation implies that the local inhabitants are highly dependent on various public means of transportation of several agencies, namely: the police, Maagen David Adom (Israel 'Red Cross' society), and transportation arranged by the plants, schools, kindergartens, etc. But mainly, it leaves the people at the mercy of the public transportation of "Egged."

Public Transportation

Public transportation consists of an hourly bus from Yerucham to Beer-Sheva and vice versa (starting at 5:00 A.M. and ending at 9:00 P.M.). A one-way trip takes approximately forty-five minutes.

The main disadvantages of this service are:

1. Low frequency which causes tiresome waiting. Local residents complain bitterly about the waste of time and inflexibility caused by the dependency on this only means of public transportation. The low frequency is justified by the number of passengers, since buses are full only during peak hours, and although the service is already subsidized, higher frequency will demand higher subsidies.
2. The services goes indirectly, passing through Dimona. This arrangement adds another fifteen to twenty minutes to the ride. In the case of Yerucham, it is another arrangement adding to the feeling of being dependent and inferior. Dimona has its own direct Dimona-Beer-Sheva bus service, while Yerucham has the one which goes through Dimona. In addition, the bus stops frequently along the way to pick up Bedouins (Arab Nomads) which slows the ride down considerably.
3. The last bus leaves Beer-Sheva around 9:00 P.M. It cuts off Yerucham's and Dimona's residents (the last bus to Dimona runs later than the one to Yerucham)

from any cultural events in Beer-Sheva, unless they have alternate means of transportation. Rarely are there any alternative arrangements for transportation after a late- night event, and it depends on the initiative of an interested public agency.

There is not an organized call service (cab service). Cabs run occasionally driven by drivers who happen to live in Yerucham and therefore pick up people on their way to or from work, especially in the mornings and evenings.

In a remote town like Yerucham, the lack of private car ownership coupled with the relatively low frequency of public transportation further strengthens the feelings of seclusion and isolation.

The Commuting to Work System

The transportation arrangements to the work places, and especially to the regional plants contribute further to the reinforcement of the "island phenomenon."

Every locality in Israel has an employment agency (an agency of the Ministry of Labor and Welfare). This agency is in charge of recruiting the local people to jobs. This is an information center regarding vacancies and job-openings. This center is also in charge of various courses for occupational training, when needed. A person

who is looking for a job can come to this agency in order to find one, but in any case, he/she has to come even if he/she has heard about a job-opening from a friend. The region is divided into subdistricts and there is "Chovat Zika" (obligation to be attached) which means that a person has to get a referral from its local employment agency to the specific plant which is seeking an employee. Moreover, the plant is not permitted to hire anybody, unless he/she has been referred to the plant by the agency. Each local employment agency is in charge of several plants in its designated area. Only in case the plant cannot find the needed worker, can it apply to the neighbouring region. (This regulation does not hold for managerial, professional and top technical jobs. In these cases the search for an employee is all over the country.) The head of the local agency in Yerucham claims that the purpose of this arrangement is to avoid discrimination among those who are looking for jobs. An official at the national level claims that this regulation was made in order to make accurate employment information available, i.e., securing equal access for each one to sources of information about job availability.

The consequences of this procedure are counter-productive. There is a rigidity and lack of mobility in the region between work places, since the plant which does not 'belong' to a specific locality will not hire

and supply commuting arrangements for workers outside its employment region. It also creates discrimination among employees by the place of their residence. Living in one place actually determines--without considering the qualifications of each individual--the work places offer.

In the case of Yerucham it is quite a crucial factor. It is probably impossible for someone living in Yerucham to work in the "Dead Sea Works" which is considered to be one of the most desirable work places in the region.[6] As a result, some of Yerucham's residents who wanted to work in this company, had to move from Yerucham to other towns in the region from where commuting arrangements are available. Moreover, as a result of this historical development, when the head of the labor union in the "Dead Sea Works" was asked why there are not any employees from Yerucham in the plant, he answered : "It was proven over the years that the quality of the workers from Yerucham is lower than the quality of the workers from other localities." An arrangement which has started with the intention to regulate the regional labor market has ended as a distorted factor.

In contrast to the rigidity in the sytem in respect to the employment policy, there is a high rate of commuting in the region between the communities and the regional plants--the chemical ones. Masses of workers commute from

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[6]A detailed description of the industrial plants appears in chapter V.

Beer-Sheva and Arad to these plants. This is a situation which has evolved as a result of the different courses of development the various towns in the region have taken. Namely, the chemical plants were planned to draw on the development towns as the main source of manpower. As the result of the laggard development of these towns a considerable amount of the professionals and the technical workers in these plants chose to live in Beer-Sheva or Arad and to commute everyday. In all cases the rides are organized and paid for by the work places. In the case of the "Dead Sea Works," half of the daily communting time is considered as work time.[7]

The heavily subsidized commuting system weakens any spatial advantages the towns of Yerucham and Dimona have by being closer to the plants. Moreover, the various arrangements contribute to the creation of a negative image to the towns.

4.3.3. Subjective Feelings of the "Island Phenomenon"

The socioeconomic structure of the community relative to other communities and the whole country, coupled with the physical distance and the administrative arrangements, have probably created a "mental distance" between the community and the central parts of the country.

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[7]The commuting time is one and a half-hour each way from Beer-Sheva, and three-quarters of an hour from Arad.

They have contributed to the evolvement of the feelings of being a part of an "island." These feelings which are part of the negative image of the town by its residents and by outsiders are being expressed in various areas.

In the rest of this section these feelings will be described. The existence and the effects of these negative perceptions will be described with a special emphasis on the employment and industrial areas.

The industrial plants in both towns face quite many difficulties and problems managing the local manpower. The problems stem from the size of the localities, their remoteness, the socioeconomic background, etc. (For details see chapters V and VII.) But the various objective measures to describe the employment situation do not suffice to grasp the whole phenomenon. The subjective perceptions of the local bureaucrats, politicians, outside industrialists and the local residents themselves, have a unique and significent role in understanding the phenomenon. The following section will elaborate on this issue.

The local bureaucrats like the head of the employment agency claims: "The people here can be employed only in simple work" and " We have to deal with the labor force that was left after everybody else left the place." He complains about the low work ethics: "People are fired from good jobs at the military air-bases built by the Americans in the Negev because their work ethics are very low: they come late to work, demand too many breaks, etc."

This local bureaucrat as well as some local politicians are losing their confidence in the capabilities of the workers. One of the local politicians who is also the head of personnel in a large factory says: "It is very difficult to persuade a more advanced company like an electronics company to come to this place."

Most of the managers commute from Beer-Sheva and the metropolis of Tel-Aviv. "If you need somebody for a senior position you would not look for the person here" claims the head of personnel, or "no senior manager lives in Yerucham" claims a local bureaucrat. Inspite of several attempts by local industries and regional ones, professionals and managers do not reside in the place, they prefer to commute from Beer-Sheva and even Tel-Aviv. This attitude by local officials is self-perpetuating. They do not believe anymore in the ability of the place to attract managers or professionals.

It is quite evident that there are very few incentives for the managers to move to the town. The disadvantages outnumber the advantages. "Being a manager, living in the community, means being a manager for twenty-four hours-a-day," says one of the managers. Another manager who commutes everyday from a prestigious neighburhood near Beer-Sheva states: "In such a small place, it is preferable for the manager, not to be socially involved with the employees." (It should be noted that some

of these disadvantages stem from the size of the town and its location rather than its special character.)

The industrialists themselves perceive the main characteristics of the labor force and the industrial climate of the towns as follows:

- There is not an industrial climate in the towns, industries are managed differently than in Tel-Aviv or Haifa.
- There is a high political involvement in the work place, primarily by the Histadrut activists.
- The work ethics are very low, and there is low motivation. Workers do not try to improve their occupational capabilities. "There is no professional and technical manpower available, and workers sometimes hold position they are not capable of holding--they do not have the needed skills."

By comparison[8] they claim: "The worker here is inferior to his colleague in the central parts of the country. You cannot get from a worker here the same output that you can get from a worker in the other parts of the country."

It seems that the industrialists base their perception of the labor force, not only on their own experience but also adopt the image reflected to them by the local people and officials. An interesting element in the

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[8]There are at least two cases in which the managers are familiar with another branch of the same plant in a different location.

industrialists' perception is the way they refer to their workers, i.e., most of the time they group them by their place of residence, namely, "The workers from place A are better or worse from those in place B." Employees are stereotyped by their place of residence. This is a very common attitude in the Negev region.

The workers tend to stereotype themselves as well. They tend to consider their fellow-workers as workers from Yerucham or workers from Dimona rather than individuals. They claim "the industries here are primitive and therefore we do not have chances to progress."

Problems with the employment of the youth can further illustrate the existence of the phenomenon and the effects of the subjective feelings on employment.

One of the most crucial problems the local employment agency faces is trying to find jobs for the youth, especially those who are after their service in the army. One of the main obstacles in recruiting the youth to available jobs is their high expectations regarding their future life in general and employment in particular.

They complain bitterly against the available jobs: "The job does not pay social payments" and "The work ethics in this place are too high, they demand too much," "The salary is too low" and "This is a primitive job" are repeated statements made by youth seeking jobs in the local employment agency.

The high expectations reveal another angle of the "island phenomenon." High expectations and the refusal to be employed in certain jobs--because they are considered to be "inferior"--are probably the outcome of the encounter of the local youth with the metropolitan life during their military service. "Once these youth experience the life in the metropolitan area they develop high expectations which sometimes do not fit their capabilities," states the head of the employment agency. "Yerucham is not the place to bridge the personal gap which was 'discovered' during the military service. Therefore, 80 percent of the youth do not come back" adds one of the youth who was just released from the army.

It should be mentioned that the youth-employment problem is a national issue, but the employment problems in development towns make the problem even harder to solve.

The gap between the life in the development towns and the central parts of the country is sometimes 'discovered' much earlier. There is a common tendency to send children at high school age to "Pnimia" (boarding schools) outside the town. This further reveals the inferiority feelings towards the "outside" world. The main reasons for sending the children are: economic--less economic burden on the family since many of these schools are subsidized by various agencies and parties, educational--trying to find better educational opportunities

than the local school system offers and social--an anthropologist found out that "It is an honor for a family to succeed in sending its child to an outside boarding school."[9] Needless to say, that most of these students do not return to the towns after graduation.

Another aspect of the "island phenomenon" is the traditional beliefs and customs among the various ethnic groups which are expressed in the employment area.

In a study on the Moroccan (Bar-Yasef, 1970), it was found: "It must be remembered that the problem of occupation has also a social aspect. Most types of employment open to the Moroccan immigrant with no profession are considered lowly since they symbolize a drop in the social status. Occupation is, after all, not merely a means of breadwinning, but also determines, to a large extent, a person's status in his society." The inferior image of most of the jobs done by the Moroccan employees has undoubtedly its impact in creating the "island phenomenon." These traditional perceptions have their effect on the female work. One of the most disadvantaged groups in the labor force are the women. Their chances of finding decent jobs are fewer. The most disadvantaged segment among them are the younger women who face both the same problems as youth and as women. Due to traditional beliefs and customs--"women should be at home, raising children . . ."

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[9]Ori Shachak, Beer-Sheva University.

Their problem, as perceived by the residents is considered to be less crucial and therefore attains less attention. They are employed mostly as: secretaries in the lower level (there is a shortage in professional secretaries), production line workers, sanitary-women, cleaners and packers in seasonal agricultural jobs.

The manager of a big company claims:

> There is an opposition--to give a woman any managerial or inspection task--among the workers who come from traditional background. All the attempts to do so failed, except for one case in which a professional-Russian immigrant woman was promoted to an inspection position. It seems that to the workers who came from Morocco or India a Russian woman was not considered to be a threat to their traditional beliefs.

In another case some twenty women were trained as solder-workers in the metal industry. After a few weeks on the job none had stayed due to the subtle but effective opposition by the male workers.

Summary

One of the most important factors in creating the "island phenomenon" is the subjective feelings of the residents in the development towns of being isolated and secluded from the various centers (physical, political, cultural, et.), but also heavily dependent on them.

These subjective feelings are difficult to describe and analyze, but they are revealed in the various spheres of the communities' life. The dependency on governmental

agencies to supply housing, education, employment, transportation, etc., adds to the inferiority feelings the community has already by being different in its socioeconomic characteristics from those in the central parts of the country.

This study restricted itself to the existence and the effects of the phenomenon on industrialization and employment in those towns.

The low socioeconomic well-being of the community, as a starting point, coupled with inadequate industrialization and employment policies have contributed in reinforcing the phenomenon.

CHAPTER V

THE INDUSTRIAL STRUCTURE OF YERUCHAM, DIMONA AND THE REGION

In the following chapter, the industrial structure of Yerucham, Dimona and the region is portrayed. In order to make this chapter compatible with the next chapter discussing the theoretical "suitability model," each industrial plant is described following the main factors composing the theoretical model.

Out of the three main elements which construct the model, the industry, community and the government, this chapter will dwell on two elements:

a. The suitability of the industry to the community - which emphasizes the extent to which local manpower is exploited adequately and the contribution of the plant to the community especially in terms of the Quality of Working-Life (Q.W.L) and wages and salaries.

b. The suitability of the community to the industry - which emphasizes economic factors of location and other factors which help to create a viable industrial plant.

Fifteen plants are described in detail, and they can be grouped to everal subgroups, according to the following categories:

a. Location: a distinction should be made between the local plants - those which are located within the boundaries of the development towns--Yerucham and Dimona--and those which are located in the region. The main impact the location has is on the labor market and the spatial distribution of the workers, as well as on the advantages and disadvantages of the plants.

b. Raw materials: plants which need to be located close to the source of raw materials versus "foot-loose" plants is another characteristic distinguishing between plants. It obviously has a strong connection to location.

c. Period of establishment: The period of establishment has an impact on the purpose of establishment (depends on social, economic and political circumstances), the technology chosen and on the future development of the plant.

d. Size: Big plant consists of approximately one-hundred employees, while the small one has a hundred or less.

Along these lines, four groups can be distinguished:

1. Regional plants - consists of three plants: "Dead-Sea Works," "Negeve Phosphates" and "Periklas." All three are chemical plants, located near the needed raw-materials. Their labor market consists of

the whole region. All three are big plants, employing more than one-hundred employees (between 180-1700 workers).

2. Local plants- among the plants in this group, several distinctions have to be made:

   a) Raw material plants: plants located in the town because of the raw material available in the location, among them: "Foenicia," "Negev Ceramics" and "Lon."

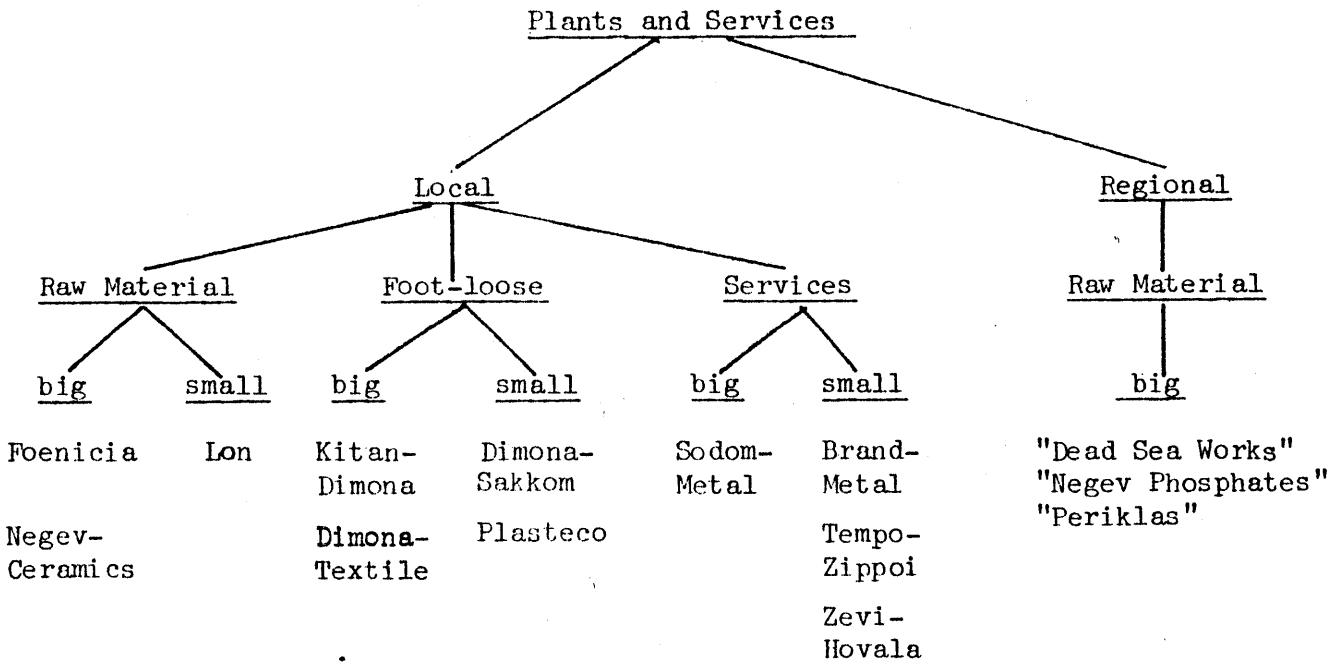
   b) "Foot-loose" plants: which are called also "neutral" plants, among them: the textile industries ("Kittan Dimona" and "Dimona Textile").

These five plants belong also to the "first generation" of industrial plants, established around the 1960s during the industrialization period of the development towns. Their main purpose was to supply employment to the residents of the newly developed towns. These plants (except for "Lon") are characterized also by their large size (between 100 and 1250 employees).

A second group among the "foot-loose" ones are small plants like "Dimona Sakkom" and "Plasteco."

c) "Service plants" - plants which supply services rather than manufacture industrial products. Among them: "Tempo Zippoi," "Sodom Metal," "Zevi Hovala," "Brand Metal."

FIGURE 5.1. CATEGORIZATION OF THE PLANTS



These plants belong to a "new generation" of enterprises, enjoy relative advantage of being located closely to their clients, and operate in a competitive market without much governmental subsidy and support which the first generation of plants have enjoyed. These plants are medium-size and small-size plants.

This chapter is based on extensive interviews with managers, heads of personnel, members of the labor unions, employees, and on data collected in each plant.

5.1. THE INDUSTRY IN YERUCHAM

FOENICIA (TEMPO)

History. The largest plant in Yerucham - "Foenicia" (or as it is called by its previous name - "Tempo") manufactures hollow glass (bottles). This plant is associated with the town of Yerucham more than any other plant. The double name stems from the integration of two plants: "Tempo" - which was established and owned by Moseh Borenstein, one of the big producers of soft drinks and beverages in the country - and "Foenicia" - the biggest glass producer in the country, owned by "Koor" - a concern owned by the Labour Union (Histadrut). Today, "Koor" is the only owner of the plant.

Both plants were established towards the end of the industrialization period of most of the development towns. ("Tempo" was established in 1966 and "Foenicia" in 1967.)

Both mark the inception of employment in industry in the town which till then was based on relief work and several jobs in the mining industry in the region.

The availabiity of the majority of raw materials (approximately 80 percent in volume) the plant needed, in the craters close to town, was the main factor in the decision to build both plants in their current location. Undoubtedly, the grants and the subsidized loans given to "approved plants" in the developing areas were not least important in their decision to locate in town.

In the case of "Tempo" a "Zionist Obligation" and the personal connection of the owner with the Minister of the Treasury in those days, Mr. Sapir - (Sapir was known for his ability to "almost" force industrialists to build their plants in remote areas in exchange for better financial arrangements) - were another significant factor in the decision to locate the plant in town.

In the case of "Foenicia," a political consideration - as an Histadrut plant - was mentioned as additional incentive to locate the plant in Yerucham.

Both plants have been manufacturing bottles. The "Tempo" conglomerate (the mother plant was established in Holon, near Tel Aviv) was the major client of its plant in Yerucham. This plant was used to manufacture also boxes for the bottles, corks and beverages. The plant has supplied the demand of the whole Negev for beverages and soft drinks. Thirty percent of the bottles were exported.

"Foenicia" mother plant is in Haifa and it produces mostly flat glass. (It has also a small bottle factory.) In Yerucham, "Foenicia" has produced bottles since 1967 and has specialized in small ones.

In 1976, as a result of mainly economic considerations (small market) and after long negotiations, both plants have established a joint company named "Tamaz" in order to manage and market the product together, while each company has continued to produce its own bottles. At that time, as a result of a decline in the demand for beverages and unwillingness to mix the private business of "Tempo" in filling bottles with beverages with the joint production of bottles with "Foenicia," "Tempo" has stopped filling bottles. The direct implication was reduction in the number of employees.

In 1979, "Tempo" sold its part to "Foenicia." Since then, the plant has been solely owned by "Koor." "Tempo" has undertaken the obligation to buy bottles from "Foenicia."

The main causes for this sale are explained by various people in different ways: The tragic death of Borenstein's son in Yerucham, pressures that were put on the owner - as a religious person to stop the plant on Saturdays, and the economic inefficiency which stems from the obsolesence of the machines and equipmment and the unwillingness to renew it since the owner found that the

plant is not profitable. It seems that the last cause is the main one for the sale. "Tempo" has found out that it will be more economically efficient for the plant to purchase the bottles from "Foenicia" rather than to produce them by itself. "Tempo" had established in Yerucham, at that time, a small plant to coat the bottles against explosion.

A year after the transfer of the plant to "Koor" ownership, the historical "Foenicia" plant was closed down, and today the "Tempo" production lines are the only ones operating.

Since April 1979 the plant has been encountering a lot of difficulties and has lost money. There are several causes for these difficulties:

1. The historical merger of the two plants and the poor management of both are considered, by the current manager, to be the main reason for the failure. Moreover, in later stages, the plant was managed by Haifa's branch whose managers did not know how to deal with the local manpower - its training, culture, customs, etc. - and could not develop a common language.
2. Economic reasons: the close down of the Iranian market which was the main export market, has resulted in a smaller market and a decrease in production which is economically inefficient for the plant of

this size. Alternative export markets exist in East Africa, but the high transportation cost and the competition with the European manufacturers of bottles - especially Turkey and Spain, which are subsidized by their governments- make the export unprofitable.

The current manager claims that under different circumstances (different location, different policies) the plant would have been closed down or at least would have reduced the number of employees. But being an Histadrut plant, in a developed area, in days in which the National Party (Likud) is governing, makes it impossible for the Histadrut to consider a closing down.

The product. "Foenicia" and previously "Tempo" have manufactured bottles, using the local raw material: glass sand - from the crater, 12 km. from Yerucham; limestone - dug 5 km. from the town, and Dolomite. All three constitute 80 percent of the raw material needed. Another component (soda) is imported from Kenya.

A bottle is relatively a cheap product, but as it has a big volume, transportation cost becomes rather a significant factor in the final product cost. The share of transportation is approximately 80 percent of the total cost. Another important factor in the production cost is energy.

The structure of the production expenditures is:

manpower - 48 percent - It has increased as a result of inflation.

energy - 30 percent

raw-material - 20 percent.

There is a know-how agreement with a German company from whom the plant bought the knowledge when it was established. No R&D is needed in this stage.

Today,, some 180 tons of glass is produced daily (a bottle weighs 0.4 kg.). The company is exporting 30 percent of its products at a loss price.

The plant is highly sensitive to economic changes. A bottle is a packing and not the product itself. Every user would like to minimize the share of the packing in the total cost. The product has a high demand elasticity, when the price increases, the users will move to the substitutions (plastic bags, cardboard or aluminum packing). Moreover, when the demand for beverages and soft drinks goes down, the demand for the bottles goes down. The profit margins are narrow, and in order to make a reasonable profit, the production should be in large volume.

The rest of this chapter will deal with the contribution of the plant to the community.

Employment. The plant today employs 475 employees, 300 are from Yerucham and the rest from Dimona (165) and from some other Northern locations. Among them, some 18-20

percent are women. Most of the employees are unskilled workers or operators of machines - a job which does not demand any special training, and is actually on-the-job training. The rest are technical workers and managers on various levels (see table 3.5 in chapter III).

Since 1973, the number of employees decreased. In 1978, the line filling beverages was closed down, and in 1979, when the plant was transferred to "Koor" the employees were given the opportunity to resign, but only a few have taken advantage of this opportunity, since employment in this plant as a Histadrut plant meant employment security.

"Foenicia" works all year around, twenty-four hours a day. The existence of a melting furnace for the glass, dictates these work arrangements which mean three shifts a day. Since the transfer to "Koor," a fourth shift was implemented as a result of transfer of workers to work on Saturdays. Previously, only Arab workers used to work on Saturdays.

Women. The women in the plant are basically employed in sorting jobs, secretarial and sanitation jobs. Some efforts, in the past, to employ women in male jobs encountered opposition from the managers, claiming that women have limitations, i.e., working in shifts, a sick child, etc. On the managerial level, they have been encountered by the opposition of the Moroccan and Indian workers to obey women. Only, in one case, a Russian

technician, a newcomer, has a managerial job and she did not encounter any difficulty. It seems that her occupational superiority and her different origin account for this attitude.

Salary and wages. The salary paid in the plant is considered to be one of the highest in the town and the region. The tenured workers get between 20-25 percent higher salaries than their colleagues in other local industrial jobs. The high salaries are due to the plant being an "Histadrut" plant. The extra pay for the second shift is 30 percent and for the third one is 50 percent.

The employees enjoy various social fringe benefits, and a special addition for working in conditions of dust and sand. (A special addition which is enjoyed also by the employees of the chemical industry.) As a result, the cost of a worker to the plant is approximately another 80-100 percent of his/her salary.

There is an incentive system based on , but it is claimed that it is used more as a tool for wage increase rather than as its original task as an incentive to increase productivity.

Work ethics. The work ethics are described by the manager as well as by some workers in two extreme ways. On one hand, one can find loyalty which is beyond the normal level, and when it is needed, workers will volunteer for any emergency or special operation. On the other hand, there is

not "tradition of work." Lack of "tradition of work" means low work ethics, low motivation and politization of the work place (including a lot of intervention by the Histadrut activists and workers from the local trade union.) The workers do not have motivation to work after achieving a specific standard of living, and the tax system in Israel does not encurage working above a specific level (the 7 percent reduction in income tax for those who live in development areas is meaningless). The rate of absenteeism is high especially in the departments with the simple and monotonous jobs, and among the daily labourer. The turnover in these departments is very high. Among the workers in the departments of quality control or the technical departments, the rates of absenteeism and turnover are low.

In comparison with a similar plant in Germany, a glass plant which produces 200 hundred ton per day, should employ (including administration and maintenance) between 200-250 employees.

As a result of the low work ethics which are expressed also by low work quality, and in addition to the one-month reserve duty, the plant has to hire over the needed workers, another 30 percent to compensate for the disadvantages of the available labor force.

For the last few months, there has been a decrease in the rate of absenteeism as a result of the employment situation in the Israeli economy and the increasing rate of

unemployment, as well as some loyalty to the current difficulties the plant encounters.

Quality of working life. The work in the majority of the plant departments (production line, packing) is considered to be boring and monotonous. The high turnover in these departments can be seen as an indication of the situation. The workers who operate the machines have some variety, but only one out of twenty can advance to a higher position. Half of the managers on the various levels have climbed the occupational ladder, while half were brought from outside.

Among the youth, the work in the plant is considered to be one of the least attractive, inspite of the high salaries.

Spatial distribution. The spatial distribution of the workers shows that among the unskilled workers, the majority come from Yerucham (78 percent). Among the skilled workers the majority come from Dimona. Among the management in the various stages, the majority come from Dimona and Beer-Sheva. Among the five top managers, one is from Yerucham, one is from Arad and three from Beer-Sheva.

At the beginning, during the first stages of the setting up of "Tempo," most of the employees in all ranks resided in Yerucham, over the years, while the plant grew, more and more employees came from outside, especially from Dimona.

The plant pays for transportation, but prefers workers from Yerucham and Dimona since it operates twenty-four hours-a-day, moreover, the plant is not built for mass travelling.

The managers who come from as far as Beer-Sheva, get a car and gas for 4000 km. per month. Although the plant would prefer workers from nearby locations, it cannot force people to move to Yerachum. Some attempts to encourage managers to moved to town have failed.

Contribution to the community. "Foenicia," and especially the previous plant, "Tempo," are strongly identified with Yerucham. The "Tempo" owners claim that a special connection was formed between the plant and its people, and that the plant has grown with the town. (When "Tempo" was established there were 1000 resident in Yerucham, while towards the end of its operation, the population of Yerucham was 7000 people.)

Undoubtedly, the plant as the first plant in the location has contributed in terms of education to work life and work ethics. Until then, people have been employed for ten years in relief work. In addition, "Tempo" has established in cooperation with the Ministry of Labor a vocational school which was planned to train the youth to the technical jobs needed in the plant. The owners claim that the school was not successful and did not fulfill expectations.

The majority of the Yerachum labor force is employed in the plant, and Borenstein has been considered the "father" of the town. The plant has invested in a program to rehabilitate prisoners, and when the rate of juvenile delinquency went up, the plant made special efforts to employ more youth.

On the other hand, this close relationship between the town and the plant is a source of some difficulties, especially when issues of hiring and firing are considered, and political and social considerations are involved rather than professional ones.

Location advantages and disadvantages. The outstanding advantage of the location of the plant is its close distance to the source of raw material. But, this advantage, in the opinion of its previous owners and the current ones as well, is outweighed by the many disadvantages.

1. Managers on various levels living out of town - the lack of attraction of the place caused many of the managers to live out of town, as far as Tel-Aviv and to commute to Yerucham. The long commuting distance is a burden on the managers and prevents proper management, especially when immediate decisions have to be taken. "Foenicia" is an extreme case in which the management of the "glass section" of "Koor" is in Haifa (in the northern part of Israel) and the financial and marketing systems are in Tel-Aviv.

2. The long distance from needed auxiliary services forced the owners to establish their own services. It causes a higher production cost. Moreover, the services themselves are economically inefficient since the auxiliary services could serve more then one factory.
3. The quality of the labor force: low work ethics and inferior junior managerial capabilities are the main complaints regarding the quaity of the labor force. As evidence of their complaints, the owners of "Tempo" bring the new plant (Beer) they are establishing in the industrial park of Holon - in the central part of the country. Inspite of a lack of any incentives, subsidized loans or interest due to its location, it is still worthwhile for them to locate the plant in the center and to overcome difficulties regarding the labor force in the remote areas.
4. The close relationship between the company and the town is a source of high political involvement in the plant and frequent disputes with the employee's committees.
5. Post factum, it is apparent that the location considerations of the plant do not play a critical role when the production of glass is considered. Transporting sand is possible and may be cheaper than

transporting the final product - bottles, since actually it is mostly a transportation of air. The success of the glass factory "Foenicia" in the North, in Haifa can be evidence of the little importance location considerations have in this case.

Future Plans. The previous owners of "Tempo" claim that the plant does not have any alternative use, and therefore it should be kept supported and when needed - subsidized. The current owners (Koor) wonder if glass can be profitable at all these days, when energy costs are sky rocketing, and the demand is quite low, but they admit that at least losses can be minimized. Since the export continues (due to the amount produced anyhow by the furnace) and the local market is quite small, a better future can be achieved if the production cost will be cut or transportation cost for the final product will be minimized.

Suggestions for improvements include: more efficient and better management and a new system of equipment and machines to suit the local labor force. Manpower is not cheap anymore as it used to be in the past, therefore it should be minimized and substituted by automation, control and sophisticated systems. A third suggestion is to try to cut the cost of transportation for the final product. This may be feasible when and if a new market is opened in a nearby area, like Egypt.

If the situation proceeds as it has been for the last few years, and the demand for bottles continues to go down, the management may decide to close down another production line which means firing some hundred employees, included skilled ones.

Summary. "Foenicia" belongs to the generation of industries of which the most representative one is the textile industry. It is a labor and energy intensive industry which once suited the population in its location. Today, it shares with other industries of the same generation, some problematic symptoms: lack of relative advantage - and therefore inability to compete in the world markets, obsolete equipment and machinery - which demand significant amounts of resources to renew and hidden unemployment.

On the other hand, as a main source of employment for the local town, it has been heavily subsidized through the years of losses either by the government or by any other public body. In the case of "Foenicia," "Koor" has at this moment an interest in helping the plant to survive. The explanation given by the heads of "Koor" for this interest, is the willingness to have a monopoly on the glass production in the country. But implicitly, this is probably a political interest, i.e., "Koor" is an Histadrut company, closely related to the Labor Party. In a country, currently governed by an opposite party - the "Likud" (the National

Party), controlling the employment of a large part of the town's labor force is a source for political power. Therefore, "Koor" will keep supporting the plant though it can implicate reducing the volume of production, firing employees and actually changing the nature of the plant to a more sophisticated one, which implys more automation, but also less emplolyees. The current manager argues that since the quality of the available labor force is quite low it is suggested that the technology will be changed to a more sophisticated and automated one which does not demand much training and not much will be left for the discretion of the employee. The simplest worker can then operate a machine which is highly controlled by automation and control system. Changing the machines to more sophisticated ones may also improve the image of the work in the place, and more young employees will be willing to work at the plant with more motivation. Today, young people are reluctant to work in the plant because of the simple and monotonous jobs.

In the long run, a change in technology may mean creating two groups of workers, one group of professionals and highly trained workers to maintain the equipmment, and one group of simple workers to operate them without much training.

If there is not any change in the demand for bottles in Israel or in the world markets, and if an alternative use for the plant is not found the plant will be forced to close

down either when the political circumstances change or when "Koor" decides not to subsidize the plant anymore. For the last few years there has been a tendency in "Koor" to emphasize the economic and commercial aspects of its enterprises rather than to operate as a political body supporting the ideology, as it used to do in the past.

"Koor" and the industrial sector in Israel, 1970-1980

"Koor" was founded in 1944 and has operated since then in the construction industry. Since 1970 its operation has spread to other industries including: chemistry, metal, electronics and food. A formal publication of the concern claims that a fundamental change in the structure and activities of the concern was made in order to give more attention to the economic goals of the country.

Between 1970-1979 the real growth of production per annum was 11 percent, while in the Israeli economy as a whole the average growth over the last decade was 6.5 percent per year. One of the main causes for the high production per worker (in 1979 each worker produced on the average $7400 worth of production, while in the whole economy it was $5000) is the concentration of most of "Koor" plants in the chemistry branch ("Koor"'s share in the chemistry industry in Israel is 21 percent) and in the metal and electronics branch (23 percent) both are capital

intensive industries. The expensive and modern equipment increases the production per worker.

Half of "Koor" investments in the last decade were directed to the development areas. In 1978, 35 percent of "Koor"'s employees were in these regions.

Employment and wages. "Koor" is the industrial branch of the labor union, and as such is obliged to increase the worker welfare while keeping the company's profitability. Therefore, "Koor" has concentrated in those branches which demand advanced technology on one hand, and on the other hand, highly professional workers. The capital-intensive equipment in some of the plants means that the production per worker is higher but also the responsibility and knowledge demanded is high. All of these are expressed in the salary and the work conditions. The metal workers in "Koor" earn about 20 percent more than their colleagues in the private sector, and those in the chemistry branch earn about 30 percent more. The fringe benefits and other social benefits are between 75-100 percent of the salary and wages and one of the highest in the whole economy.

Until 1980, some 25 percent of "Koor"'s plants shared profits with their employees.

NEGEV CERAMICS

"Negev Ceramics" produces ceramic tiles. The plant was established in 1972 by a private entrepreneur - Joseph Peker who owns some other plants near the metropolitan area. According to Peker, the main reasons for locating the plant in Yerucham were:

1. The existence of the main raw material - the clay - in the near crater (the Small Crater). Post factum, it was found, after the plant had been established that the clay does not have the proper quality, and therefore, at the beginning the plant had to import approximately 70 percent of the raw material. Over the years, substitutions were found in some other parts of the country, and today only a small fraction of the raw material is imported (20 percent).
2. The incentives given to "approved enterprise." Since the plant is a capital intensive one, it needed a significant amount of initial capital investment, therefore, the loans and subsidies, covering a major part of this investment (approximately 75 percent), were a major consideration in the decision to locate the plant in Yerucham.
3. Similar to the case of "Foenicia," the owner attributes his close relations with Sapir - the late Minister of Budget - to the decision to locate in

Yerucham, though he feels that he was almost "forced" to be a pioneer.

When the plant was first established, two production lines were operating, one produced porcelain and the other ceramics. In 1975 the porcelain line was forced to close down because of disadvantages to scale, it was too small to operate profitably. The ceramics line suffered massive losses between the years 1972-1976 as a result of expected problems of a new organization and incompetent management, but since 1976, the ceramics line has specialized in the production of high quality ceramic tiles and in tones which appeal to a specific segment of consumers in the world. The plant actually has created its own market in some countries. Although, initially, the plant has not had plans to export, its export has expanded from 10 percent of its production in 1972 to 50 percent today, and the demand exceeds the supply. The main countries to which the tiles are exported are: Canada, South Africa, Singapore and Hong Kong.

The main sales offices are in Tel-Aviv, in which ten salespersons are employed. The management services, i.e., lawyer, accountant, etc. are bought from the mother-company, "Peker-Plada" in Tel-Aviv.

<u>The product and the raw materials</u>. The structure of the expenditures is:

- 15 percent raw material
  20 percent capital (financing and depreciation)
  35 percent labour

20 percent energy

10 percent sales and managerial expenses

The clay which comes from various regions in the country, takes the lion's share of the raw material.

The plant is a continuous plant which operates 365 days a year, and the main risk is in the functioning of the furnace. Therefore, the plant has to invest continuously in maintaining and renovating the furnace.

Employment. The plant employs today eighty workers. Fifteen have managerial and technical jobs, and the rest - sixty-five, are the operators of the machines. Out of the eighty employees, forty-three are from Yerucham, thirty-three from Dimona and three (the manager, the production manager and the mechanical engineer) commute from Beer-Sheva. Except for the four senior positions, the other twelve managerial and technical workers come from Yerucham and Dimona.

The plant pays commuting expenses but does not pay for the time of commuting as some of the regional plants do. At least one of the senior managers was willing to move to Yerucham, but could not find suitable housing and therefore has moved to Dimona. There is not an explicit policy to force people to move to Yerucham, but it seems that the majority of those who live in the place, have moved because of the employment in the plant. On the other hand, few senior employees who have once moved to Yerucham (the

company owns three apartments in the place) have left after a short period. The main cause was the dissatisfaction with the education system in the place.

The plant's workers-union has an interest in employing workers from the place. The plant itself would save a considerable amount of resources if all workers resided in Yerucham.

The wages in the plant (private ownership) are considered to be lower than those in the Histadrut plant ("Foenicia") or in the regional industries, but higher than those in the Textile branch. In the opinion of the plant's trade union, the wages are higher than those ruled by the labor agreements of the Histadrut. The wage agreements include extra pay of 30 percent for the second shift and 50 percent for the third one. Nevertheless, the plant does not have a system of norms and incentive system.

There is an awareness among the workers that they are working in a private enterprise and therefore, their product should be able to compete in the world market. The employees' committee is aware of the importance of the quality of the work and therefore, finds itself sometimes in conflict between its good relations with the management and its obligation to the workers. The workers appreciate the management's understanding of the daily worker's needs. The plant subsidized 78 percent of the cost of the worker's meals, the workers can buy the plant's production cheaper and on favorable terms.

The employees emphasize the importance of the small size of the plant which allows close and good relationships among the workers and gives them feelings of "home" which compensate for the lower salaries.

The plant does not face special problems in finding workers except for some professional positions: mechanical engineer and chemical engineer, which were not filled for a long time. There is a high turnover among the operators since the plant tries always to find better workers. Nevertheless, the youth in the place are not attracted to the plant since the chances for occupational mobility are very slim (the production line is quite simple) and due to the low wages and shift work. The plant has therefore relative disadvantages while competing on the qualified labor force with the regional or Histadrut plants. Its only advantage is its closeness to home.

The number of women employees is small. Among the four women, two work in production, one in services and one is the operator. The main reason for the small number of women is their inflexibility regarding shift work.

Contribution to the community. "Nevev Ceramics," in hope of creating strong relationships between the plant and the place has built a day-care center, though there are only four women working in the plant. These relationships have never developed. For example, to the expected relationships Peker brings the day-care center he has built in another

plant he owns in Kiryat-Malachi, in which a 'dialogue' has developed between the plant and the place. The plant arranges parties and social events and also organizes trips.

Location advantages and disadvantages. The founder of the plant, Peker, claims that there is no relative advantage in locating the plant in its current place. Moreover, there are several disadvantages:

a. The main relative advantage - the close distance to the source of raw material has never materialized since the raw material is brought from all over the country. The transportation cost of the raw material is meaningless. On the other hand, the manpower in the place does not fulfill expectations and since the plant is considered to be a capital intensive one of which the quality of the labor is of great importance, this disadvantage has a significant effect on its operation. Actually, the founder claims that the development of the plant has been slowed down as a result of the distance, and the quality of the labor force. While comparing to the quality of the labor force in the other plants he owns in the metropolitan area, the founder argues that the plant could have developed more rapidly and could produce a variety of products, had it been established in a different location.

The only reason to locate the plant in Yerucham was the financial support in the form of subsidies and grants which the plant could get only in the development regions.

Today, with an export of approximately 50 percent of the product, it could be located in any place in the country and could get various subsidies and grants.

b. Most of the managing staff commute everyday from Tel-Aviv, Beer-Sheva and Dimona. There is a high dependency on commuters which is unhealthy for the plant.

c. Services - most of the auxiliary services are supplied by suppliers who are located north of Beer-Sheva. Only a few minor services are supplied locally. When the plant needs the police or the firemen services, it has to turn to the services in Dimona, since the general director claims that he cannot rely on the local ones. The same is true for special transportation services. Only lately, the plant has begun to buy gas from a local station after the owners promised to stay open twenty-four hours a day.

Most disadvantages are attributed to the small size of the town and the low threshold for necessary services.

Future plans. The plant intends to expand production by buying a new furnace ($3 million) and by renovating the old one which may serve the plant for another few years. The implication of this expansion from manpower's point of view is an addition of no more than twenty-five workers since an addition to the managerial and administrative infrastructure is not needed. In the long run, the founder thinks it will be possible to develop and expand the ceramics industry in the region.

Summary. "Negev Ceramics" is a plant which apparently is based on the relative advantage of the location, but practically could have been established in any place in the country. Its economic strength is based on the quality of the product and its export market.

From the point of view of the community, Yerucham, it can be considered as a suitable industry since it gives a decent standard of living to its workers and some satisfaction in their work. This is a plant which fulfills the local need for jobs for some skilled and professional workers and for simple workers as well. This is a plant which fulfills the needs of those who do not wish to work in the raw material plants which demand hard working and long commuting hours.

If there are not any radical changes in the export markets or in the local ones, there will not be any danger of reducing the number of employees or a danger of closing down the plant. On the other hand, the plant does not plan to provide jobs beyond the modest plans outlined above.

LON LABORATORIES

"Lon" is a plant which produces cosmetics products. It was actually the first industrial plant in Yerucham (1963). The plant was established in Yerucham since the

company got concessions from the government to establish a cosmetic plant whose products are based on mineral waters from the area, under the requirement that the plant be located south of Beer-Sheva.

The plant began to operate with six employees and by the beginning of the 1970s it employed sixty workers. While it had a concession from the international company of "Fabrege" it exported 80 percent of its production. When the right for the concession expired, the export and hence the activity of the laboratories decreased. Today, the plant exports 50 percent of its product. It markets its products directly to beauticians and beauty salons. In Israel, its marketing difficulties stem from competition with big commpanies like "Revlon" and "Helena Rubenstein." Another source for difficulties is the recent tightening in the credit market.

The product, raw material and production. The plant produces few products: various cosmetic treatments and make-up. The plant has a small research and development unit and it employes two chemists who develop new products, the plant does not buy any know-how. Today, the majority of the raw materials are imported from abroad, or are brought from the central parts of the country. The plants exports 50 percent of its product.

The various auxiliary services are bought in Dimona and Beer-Sheva. The sales center and the main office are located in Tel-Aviv.

The volume of production today is approximately $700,000. In the beginning of the 1970s it was threefold.

The composition of the production expenditures is: 70 percent raw materials and packing, and 30 percent labor force.

Employment. Today, there are approximately 30 workers. Among them, ten to eleven are in administrative jobs: chemists, warehouse workers and maintenance people, and twenty women working on the production lines - mainly packing the products. Five women come from Dimona, since the manager could not find enough women who can read the Latin letters in Yerucham. Some of the workers have climbed the occupational ladder in the plant. For example, one became foreman and another manages the warehouse.

The wages in the plant are quite low since it belongs to the food industry branch. The food and textile branches have the lowest level of wages among all industrial branches, but it seems that the convenient work conditions (five work days and the close distance to home), and the "homey" feeling the plant gives, compensate for the low wages. The plant does not have any problems in hiring workers when needed (mainly women).

Future plans. As was described before,, the plant has lately encountered financial difficulties and was on the verge of being closed down. The employees did not get their wages for several months. Some relief may come if economic

conditions change and it is worthwhile to increase production for the local market.

Summary. This is another example of a plant which was established in a specific location as a result of, seemingly, relative advantage and government subsidies, but post factum it was found that there was not any relative advantage. The low rent and the previously close distance to raw materials are offset by the transportation cost of the final product.

The main constraint this plant has is marketing. It could produce more but it has difficulties marketing the product in the local as well as the export markets. In the local market, the problems of economic policy, high interest rates and inflation make it difficult for the small plant to give credit to its clients, and therefore, has to limit its production. In the export markets, it has to compete with the many big firms, nevertheless, for exporting, the plant gets relatively cheaper financing.

BRAND METAL

"Brand Metal" is not an industrial plant by the common definition. This is a big mechanical locksmith workshop, but the circumstances under which it was established, and the problems it encounters characterizes

other plants in the developing areas. The plant was established two years ago by a father and two sons and got the status of "approved enterprise." In the past, the owners used to work in Beer-Sheva, but have decided to move to their hometown, Yerucham, in order to supply locksmithing services and other metal work needed by the big plants in the region like "Dead-Sea Work" and the Arava (the southern part of the country) plants.

Production, raw materials. The enterprise deals with rolling iron, cutting and bending metals and mainly renovating machines and equipment.

The competition in the area among metal workshops is quite strong, and in order to gain work from the plants around, the plant has to excel in its performance. The strongest competitor is "Sodom Metal," a big and established company (two-hundred workers) settled in Dimona.

"Brand Metal" tries actually to get work from the same clients as well as from clients who used to sent metal work to Tel-Aviv. Governmental ministries and especially the Defence Ministry are obliged to prefer companies in the development areas to others in the rest of the country when subcontracting work.

Employment. The plant employs between twenty and twenty-five employees. Half are skilled workers. The plant is characterized by high turnover. Those workers who have resigned claim that the work ethics in the place are very

high, which means strictness concerning work hours and breaks, as well as the long working hours (7 A.M. to 5 P.M., six days a week except Friday on which people work till 2 P.M.). On the other hand, they admit that the salaries paid by the plant are, relative to the salaries paid by other plants, quite high. Moreover, there are opportunities to get on-the-job training, and to climb the occupational ladder. The owners admit that quite a lot of workers were fired because they have not fulfilled expectations, nevertheless, those who want to learn and benefit from the job can do it.

Half of the workers commute from Beer-Sheva, since the plant could not find the appropriate workers either in Yerucham or Dimona. It is therefore forced to pay travel expenses. The plant looks for employees aided by the local employment agency, but the latter finds it difficult to convince the unemployed (mainly those who were recently released from the army) to join the plant. The owners think that another reason for the difficulties in hiring the needed skilled workers is the preference of skilled workers to work in the bigger and more established plants like "Sodom Metal" which have set their name in the field and which are able to pay better payments and to provide higher fringe benefits. At this stage, the plant cannot compete with them in this sense. The local labor union which usually cooperate with the workers to organize labor unions

in the plant in order to achieve better social benefits, is aware of the fragile situation of the plant and at this stage does not press in creating a worker's organization. It perceives the plant as a good and promising one and tries to help in its initial stages. The plant has a sufficient amount of orders but the bottleneck of the labor force prevents it from expanding.

Summary. The locksmithy is undoubtedly a post mark of a new pattern of plants and services which have been located in Yerucham for the last few years.

This is a plant which enjoys actually one advantage, of being located close to the source of jobs for its operation - but suffers from several disadvantages and yet, tries to compete with any other similar plants in the country and in the region.

It seems that a shortage of suitable manpower restricts the optimum operation of the plant.

Only a major change in the attitude towards work and in the quality of manpower will encourage plants of this type to be located in the place.

Yerucham - Other Plants and Services

Other plants and services include: "Tempo Zippoi" - a small workshop which coats bottles with plastic coating to prevent explosion, "Long John" - a new textile plant which makes pants and trousers, and "Zevi Hovala" - a transportation service company.

The first plant was established by the "Tempo" owners, and when they left, it moved to "Foenicia" ownership. It employes twenty-five unskilled workers and few skilled ones who commute from Beer-Sheva and Dimona. The main problem it faces is the small volume of production which means inefficiency in production. It stems from the situation in which only part of the bottles in the country are coated while the plan was that a law, issued by the Ministry of Health, would force all the bottle companies to coat their bottles, this has never matialized. As a result the plant is dependent solely on the number of bottles produced by "Foenicia," and the latter is dependent on the volume of orders by "Tempo," and the demand for bottles in the country. It follows that the plant is very sensitive to risks regarding demand. Some argue that today the plant is on the verge of closing down.

"Long John" was established recently, and at this stage the plant is in a run-up stage. The decision to locate the plant in Yerucham was highly affected by the grants and subsidized loans given to "approved plant," which chooses to locate in the high priority areas. Since this is a capital intensive plant, the various incentives were crucial in the decision to locate in the place. All of the plant's production is planned for export. Sewing for export demands high quality and strictness regarding timing and keeping the schedule. In this sense "Long John" belongs to

the "new generation" of plants like "Brand Metal" which try to operate differently from the "old generation" of industries. "Long John" is actually a "spin-off" from the big textile plant of "Polgat" located in Kiryat-Gat, another development town closer to the metropolitan area of Tel-Aviv. The manager used to work in "Polgat" and through his work he has found that there is a high demand for the specific product which "Polgat" is not able to fulfill.

At this stage,, the plant takes in new employees. Working in the plant does not demand a long training period and special skills whereas the plant is capital intensive and the machines are fully automated. When the plant will operate at full it will employ fifty women. The manager does not anticipate any problems in finding the needed employees since the supply of women in the local labor force exceeds the demand.

The third firm is a transportation firm, "Zevi Hovala." It was established a year ago by eight residents from Yerucham, who previously had worked as individuals for twelve years. The company owns a fleet of sixteen trucks. Their main client is "Foenicia" for whom the company serves as the sole supplier of transportation services. The company encounters several difficulties, among them: lack of confidence - an attitude expressed by potential clients - companies which are looking for transportation services. This attitude stems from the image, Yerucham reflects on the

firm located in the place. The owners argue that if the main office had been located in a different place, business could have been done more smoothly. In order to improve its image the company keeps schedules very strictly, fulfills every contract to its last point, and builds confidence in its clients.

The second difficulty faced by "Zevi Hovala" is entering the regional market which is almost monopolized by the governmental company of "Mifaály Tovala," which owns a fleet of 359 trucks and serves all of the regional chemical plants. The company has tried to get some contracts from the Ministry of Defence but the Ministry has already contracts with other companies which cannot be broken inspite of the fact that "Zevi Hovala" submitted a cheaper offer since it is located in the region. The expansion of the firm depends upon getting more contracts.

Summary. The industrial history of Yerucham is actually the stories of the seven plants outlined in the previous paragraphs. Over the last twenty to thirty years, some small plants (especially textile workshops) have been established but none have survived. The new generation of small plants and enterprises may indicate that a new era of industrialization is about to appear, but the early stages of development of these plants and the difficulties they have been encountering do not make the industrial future of the place too secure.

5.2. THE INDUSTRY IN DIMONA

The Textile Industry

There are two textile plants located in Dimona: "Kittan Dimona," which belongs to the conglomerate "Clall," and "Dimona Textile," a private plant which has changed hands several times over the years.

Both plants belong to the "old generation" of industries established in the 1950s and 1960s.[1] The textile, clothing and leather branches have contributed considerably to the goals of industrial development in its early period. The combination of capital investment and employment of relatively unskilled labor force, has made these branches the most preferable ones for a rapid industrialization of the economy and for the absorption of the mass migration all over the country.

The weight of these branches has been progressively decreasing during 1950-1980 with regard to output, employment and capital. The various improvements in the spinning and weaving machines over the years have resulted in speeding up the processes and increasing the total product. Nevertheless, it did not bring the branch to a total automation and the plants in these industrial branches have kept demanding a combination of capital investment and

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[1]The following paragraph is based on: Ministry of Industry and Trade, "Industry in Israel," September 1981.

employment of masses of manpower. The textile producers have demonstrated conservative attitudes regarding changing and improving equipment. They have operated old and outdated machines for a long period. A new generation of modern textile machines which are faster and more efficient which have been developed over the 1960s as well as automation and control systems, are factors which set up a pressing problem for the textile producers: to weigh the considerable amount of new investment against the increasing rate of production and the marketing potential of the product.

The modern and perfected equipment act towards strengthening the specializing in large production lines and exploiting the advantage of scale in a "vertical" framework, which means that every plant will manufacture from the stage of weaving (fabrics) to the final product (the clothes).

The frequent changes in the textile market and the constraints put by the changing requirements of the fashion market, operate contrary to the direction of changes dictated by the modern equipment.

It seems that these contrary forces will bring about a revolutionary change in the textile industry. The industry will purchase modern and improved equipment and will go through specialization process in the course of integrating vertically and will become "capital intensive" industry in which the equipment is depreciated and changed every few years.

Although the weight of the branch has been progressively decreasing during the period 1950-1980 with regard to output, employment and capital, it is nevertheless worth noting that its part in exports has grown to a record of nearly 17 percent of the total exports in the year 1970. From that year onwards it began steadily decreasing, partly because of the larger growth of the metals and chemical branches and partly because of declining demand in the world markets following developments there.

The share of the Israeli textile and clothing industry in world trade is small. There is room for developing export markets, but on the other hand there is tough competition among the big exporters - Japann, Hong Kong, U.S.A., France, Italy, which necessitates skills and inventiveness in developing exclusive, fashionable products which may create its own market and therefore enables competition in the world markets. In order to be successful in the world market, the Israeli textile industry has to export high quality products and to be able to produce in large scale (in Israeli terms). It seems that the world demand for textiles and clothing works in favor of big and sophisticated products and in vertical operation whose production lines are built to handle large scale, standard production lines while retaining strictly the quality, standards and schedules.

KITTAN-DIMONA

"Kittan Dimona" was established by the end of the 1950s. The main purpose in establishing the plant was to provide a supplementary source of employment (in addition to the regional chemical plants) to the residents of Dimona and Yerucham.

Economic considerations and profit making were not among the most important considerations when the plant was established. Actually, at that time there was already a surplus of textile production but Sapir, the late Minister of Budget, preferred surplus over unemployment and unrest in the development towns.[2] The textile plant was considered to be the adequate solution for the population in these towns. It did not demand education and much training. Since there was no incentive to operate the plant efficiently, and governmental subsidies have been pouring whenever it was necessary, the outcome was inferior quality of production, low work norms and low work ethics.

This situation lasted until 1977 when two major changes took place: on the national level, since the 1973 war, the government has begun to reduce its support for plants, especially in developing areas which had been subsidized for a long time and were not able to operate without this support. This was a part of a development in

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[2] "Haartz," March 24, 1958.

the Israeli economy to minimize governmental intervention in some economic areas.

On the plant level, the conglomerate "Clall" of which "Kittan-Dimona" is a subsidiary, has decided to follow a policy similar to the governmental one, and to eliminate any failed plant. It has given "Kittan" a chance to recover and to enter the export market. Many employees have been fired, an incentive wage system was established and inspite of disputes and strikes, the plants has recovered. From $12 million export in 1977 the plant has reached $30 million export in 1980.

Employment. "Kittan Dimona" like many other textile plants has manpower problems, i.e., shortage of workers especailly in the production lines and high turnover. In some departments, especially in the spinning and weaving, there were up to three turnovers of workers within a year. Out of the 1200 workers, 300 are Arabs who come from the West Bank and are willing to do the jobs which the Jewish employees refuse to do..

The main reasons for the refusal to work in the plant in general and in the specific departments in particular are the work conditions. The quality of working life is quite low;there is noise, dirt, it is very hot in the summer and cold in the winter, the work itself is physically difficult as well as the psychological effort. On the other hand, the basic salary is very low, but the

managers claim that with the system of incentives one can get to a quite high salary. Nevertheless, this salary cannot compete with salaries given in the chemical plants in the area. The basic salary is even lower than the unemployment payments given.

Since 1977 the company has begun a recovery plan. Out of 1650 employees then, 250 were fired. In the spinning and weaving departments a new system of incentive system was developed, and there were signs for increase in output and its quality and in production. The plant moved also to manufacture new and more sophisticated products suitable for export especially camping equipment (90 percent is imported to Europe). All this was done while other textile plants over the country, especially in development areas have been closed down.

Contribution to the community. The two textile companies, "Kittan Dimona" and "Dimona Textile" (see next paragraph) employed in 1966, 1,788 workers who were then, 43.4 percent of the total employees in the place. In 1980, 1,295 of Dimona's residents were employed (16 percent out of 8,000 employees). This decline in percentage indiates the decline in dependency of the town on the "first generation" and labor intensive plants.

Nevertheless, the plant was for many of Dimona's settlers the first experience of work life in contrast to unemployment or relief work they had been engaged in until then.

For the last few years, the plant encountered problems in finding workers, especially for the weaving and spinning departments. The employment agencies in Dimona and Yerucham find it very difficult to convince unemployed especially among the youth who have just been released from the army to work in the place. Women are more willing to work in the place, especially in the sewing workshop, although the three shifts and the low salaries discourage from working in the place.

Among the males, heads of families the plant is considered to be a less desirable place to work because of the low salaries and the bleak chances for occupational mobility. On the other hand, there has been a continuous situation of unemployment in the town, but the unemployed prefer to stay without work and to get sometimes unemployment benefits rather than to take jobs in the plants.

As was mentioned before, automation can be a partial solution to the manpower shortage. The machines and the whole technology are quite old and obsolete. (The rumors are that when they were bought in the 1950s from European countries as part of the German reparations and restitution payments they had already been quite obsolete.) Automation will reduce the need for workers, and on the other hand, will improve the image of the work place.

The manager who is aware of this solution claims that if new machines are bought, the whole system will have to be reorganized, an operation which cannot be implemented at this stage when the company fights to survive.

DIMONA TEXTILE

"Dimona Textile" was first established as "Dimona Textile" by private entrepreneurs in 1960. It employed then approximately 1,800 employees. The plant included: a spinning mill, knitting workshop and a workshop for synthetic fabrics (Diolen-Luft) which was called "Yerucham Textile." The origin of the name came from the initial plan to establish the plant in Yerucham, but the owners, while taking advantage of the incentives given to Yerucham as an area with higher priority than Dimona, preferred to establish the plant in Dimona which had already some auxiliary services and better infrastructure than Yerucham. "Yerucham Textile" has been closed down since the product was not successful.

The rest of the plant went through several stages, changing hands and at last went into the hands of an official receiver which has kept operating the plant until 1979 when it was bought by a Swiss company headed by a Sepharadic Jew (Mr. Gaon) who sees in buying and operating the plant a help to the Sepharadic community in Dimona

(Moroccan). Since then, a new development has taken place under the name of "Dimona Textile."

The main product is: cotton threads and cotton with Diolen threads, both are manufactured in the plant's spinning workshop. Twenty percent of the raw material is imported.

The company encounters problems in two areas: exporting the final product, and low quality and shortage of manpower.

"Dimona Textile" is one of the biggest spinning mills in Israel. There are altogether seven mills which are organized as a cartel, each one specializes in a specific kind of product. The cartel regulates the amount of production and the markets to which the product will be marketed. In Israel the market is protected but in other countries there is a "damping" of low-quality threads which is difficult to compete with. Moreover, the price of labor in other countries is lower which gives them a relative advantage.

The manpower problem is a more severe one. The plant employs today 630 employees, out of the 630, 110 are Arabs from the West Bank, brought everyday by cabs since they live in many scattered villages. Seventy-five workers are brought from Beer-Sheva and from Yerucham there are only 50 workers.

The turnover is very high especially in the spinning mill which is totally occupied by Arab employees. In the weaving workshop which is considered to be a more convenient place to work, Arabs and Jews are working together. In the sewing workshop there are only Jewish workers. Over the years less and less people from Dimona have been working in the place and the turnover gets stronger, i.e., the percentage of workers employed permanently is decreasing, and the periods in which they are employed is shorter.

The employment agencies in Dimona and Yerucham have been requested for a long time to refer workers to the plant but, as in the case of "Kittan-Domona" many of the unemployed refuse to work in the place mainly because of the hard work conditions: three shifts, noise, pollution and the tough physical work. The salaries, on the other hand, are quite low although with incentives it can get quite high. The problem is that they are almost as low as unemployment payments. Moreover, for the youngsters, there are not many opportunities for occupational mobility. On top of it, the plant has developed a negative image which has been strengthened as the share of Arab workers has increased.

The machines are obsolete. They had been bought in the 1960s from German companies which had changed their machines to more modern and sophisticated ones.

In order to overcome the problems of manpower shortage the firms has to close down machines from time to time and to work under its capacity which means economic inefficiency. Another way to solve the problem is to create a long working shift of twelve hours paying incentives and additional hours. A different solution is shifting workers between departments, etc.

The new Swiss owner's plan to invest in new and modern equipment and machines which means on the one hand, firing workers and decreasing the number of employees and on the other hand, will improve the quality of working life in the plant and may increase the inclination of the unemployed to work in the plant. The owner planned as well to create a vertical enterprise, from spinning to sewing the final product in order to take advantage of the higher value in such an operation.

Dimona - Other Plants and Services

An annual report by the Ministry of Commerce and Industry lists, besides the plants listed in the previous chapter, some other twenty plants in Dimona. The list includes some which are actually services rather than industrial plants like: regional bakery, printing house, packing house, a sewing shop, etc. The number of employees ranges from five to sixty. Outstanding in the number of

employees is a big locksmithy - "Sodom Metal" which employs approximately 250 workers. From interviews with the managers of three of the twenty plants, it seems that the circumstances in which they operate and the problems they encounter characterize industrial plants in the development areas, in general, and those in Dimona and Yerucham, in particular.

The three plants are: "Sodom Metal," "Plasteco" which manufactures Fiberglass Reinforced Polyester pipes for industrial use and "Sakkom Dimona" which manufactures stainless flatware.

All three managers have complaints regarding the quality of the labor force. "Sodom Metal"'s manager claims that there is a shortage in skilled labor force, and if he had more trained employees he could expand and get more projects. Moreover, he speculated that in a different place, closer to metropolitan areas he could have gotten a more qualified labor force which would have enabled him to achieve a better professional achievement in the projects, spending less time. On the same line, the manager of "Plasteco" says that they do not expand because of lack of skilled manpower, moreover, the number of employees has shrunk considerably since it was established in 1972. "Sakkom Dimona" on the same line argues that the work climate in the place cannot be compared to the one in the

central part of the country.[3] There is a lack of work ethics and initiative. The solution to the situation which was actually implemented by the plant was to adapt the technology of the plant to the quality of the labor force available. Flatware in Israel has a marketing problem since a cheap import is coming from the Far East and "Sakkom Dimona" finds it difficult to compete with this import even though the quality of the Israeli product is much higher. Thinking about switching to different products using the existing technology, the company is constrained by the available labor force which according to the manager's opinion, is not capable of fulfilling the needed skilled and professional requirements.

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[3]The manager of "Sakkom Dimona" manages a similar plant in Tel-Aviv, and commutes twice a week to Dimona.

5.3. THE REGIONAL CHEMICAL INDUSTRY

The regional chemical industry consists of three plants: "Dead-Sea Works," "Negev Posphates," and "Periklas." All three are based on local raw material and natural resources, they are owned by the public company of "Israel Chemicals," and by their nature they are located a long distance from population centers and ports, therefore, they rely heavily on the commuting of their workers and the transportation of the final product.

ISRAEL CHEMICALS LTD. (I.C.L.)

Israel Chemicals Ltd. (I.C.L.) is the parent and holding company of a group of chemical enterprises engaged in the development of Israel's main natural resources, the Dead Sea brines and the Negev desert mineral deposits.

It is government owned and was established for the purpose of coordinating and promoting Israel's inorganic chemical industry.

The various companies of the group are located in the southern part of Israel, extracting the natural minerals and converting them into chemical products, mainly fertilizers. I.C.L. companies provide all the required fertilizers for the Israeli market and the great majority of the groups' production is sold in the international market.

Each company is an independent legal entity which is managed by an independent managing director reporting to an independent Board of Directors in which I.C.L. has one third of the vote. The managing director of I.C.L. serves as the chairman of the board of each company. The other two thirds of each board are composed of government officials and notable public figures.

It is the responsibility of I.C.L. to allocate resources for new investments, coordinate operations and maintain liasion between its daughter companies and the government. All the companies are organized in a functional organization and maintain a complete functional independence including production, finance, human resources, marketing and R&D. All three plants are categorized under "National Projects," which means that all the decisions concerning investment and further development are done under broader national considerations rather than short-run narrow economic ones.

DEAD SEA WORKS. (D.S.W.)

The Dead Sea Works Ltd. was refounded in 1952, and production began in 1955, after the Beersheva-Sodom road was constructed and fresh water wells were dug. (In 1931 the first potash and bromine works were established by the

Palestine Potash Co. Ltd. which was founded by British and Jewish investors, on the northwest shore of the Dead Sea close to the inflow of the Jordan River. In 1937 the company founded another plant at the foot of Sodom on the southwestern shore of the Sea. During the War of Independence the northern plant was destroyed and only the plant at Sodom remained, although it did not operate because of a lack of road connections.)

In 1956 a new bromine plant was constructed and in 1962 large-scale expansion of the works began which was made possible by loans from the World Bank and other foreign banks and by the sale of shares in Israel and abroad. The project included the creation of a hugh evaporation pan system (to produce potash) as well as the construction of the two modern semi-automatic potash factories.

The plant exports 97 percent of its production which includes direct product--potash, and indirect ones--production of fertilizers based on potash. For less than two decades the complex has not had any profits and in some years had even suffered losses due mainly to marketing and prices in the world. But for the last few years the profit has increased from 1.1 million I.L. in 1970-71 (1$=3IL) to 504.3 million I.L. in 1980 (1$=80IL). The company has begun to invest in developmment and expansion, and as another sign for recovery it has begun paying royalties to the Government of Israel for permission to use

the country's natural resources. The company has begun to pay as well dividend to its stockholders who consist of 90 percent - the Government of Israel, and to the rest (10 percent) of private holders.

Employment history. When the factory was reestablished in 1952, all of its workers lived in work camps around the plant. The place has become an attraction for many youngsters interested only in the adventure and the high wages. They viewed the work in the place only as a wayside station where they would stop as brief a time as possible, and then only to enrich themselves with the high wages they received. Many never even finished their first week of work. The withering heat drove them swiftly away from the Dead Sea. Others managed to stay and work until their pockets were filled and then they also hastened to flee. Problems of drugs and prostitution have been flourishing in the camps. These social problems added difficulties to the production difficulties over the first four years, 1952-1956.

In 1956 a new management took over. The first step taken by the new management was to liquidate the existing work camp. New employees were chosen, family men were preferred as responsible and mature persons, who took their work seriously and respected it. The new management has expended much effort in achieving healthy relationships and in creating a feeling of identification between the worker

and the plant, no less than in the development project. These changes are strongly tied to the name of Maklef, who became the general director of the plant in 1954 and saw in the workers the most important part of the plant. The veteran workers from Dimona see in Maklef the "father" of the plant and of Dimona, since a strong relationship had been created between the two in the initial stages of the town's development. Maklef argued that one of the main justification for the plant is to supply employment, and as an important national project it should exist even though it does not always make profits. He invested a lot of effort through training and education in the workers from Dimona - the vast majority newcomers from North Africa - to whom employment in the D.S.W. was the first experience of work life. Many people in Dimona today believe that in the work camp and later through the unique relationships between workers and management, the strong leadership of Dimona has been shaped (Dimona has today two parliament members).

The D.S.W. is one of the biggest emploeyrs in the southern part of the country. In the plants in Sodom and in the offices in Beer-Sheva (which include the administration, finance, R&D, etc.) there are approximately 1,300 employees. The D.W.S. employs indirectly thousands of people in the area.

The plant does not face any difficulties in hiring new workers. For each vacancy there are up to forty

candidates. The salaries, fringe benefits and the social benefits are high. The various social benefits include various facilities in the work place as well as special courses for advanced training and courses in other areas like: languages and general education in the places of residence, mainly Beer-Sheva. The company provides loans towards payment of the tuition of the worker's children in vocational and regular high schools and give scholarships for higher education for worker's children who choose to study chemistry studies.

The work conditions are: high salary which includes high incentive bonus, an additional salary for the year (a thirteen month salary), yearly bonus based on profits, a work week of five days, and an earlier retirement (at the age of fifty-eight after twenty-five years of work but not later than the age of sixty-two).

The company pays for transportation in air-conditioned buses. Moreover, it pays for half of the commuting time, which amounts to 1.5 hours a day (one way) for the Beer-Sheva workers.

The D.S.W. hires its employees from Beer-Sheva, Arad and Dimona, and when needed from all over the country through announcements in the newspapers. A report by "Pilat"[4] states that there is a high motivation and

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[4] "Pilat" is a consultant company in the area of manpower. They select employees for the D.S.W. The selection includes conducting psychotechnic tests and personal interviews.

identification with the plant among the workers. There is a willingness to invest in work and to contribute. Among the veteran workers there are feelings of pioneering and deep rootedness of the kind pioneering farmers in Israel express. The workers grow and develop in the same plant (there is no mobility between the five projects in the D.S.W.), and strengthen over the years their acquaintance with the work which in turn has created identification and persistence. Some other important characteristics which have contributed to this attitude are: the quality of the working life in the plant, the material rewards, the social context the work-team or the specific shift gives to the workers. Sometimes a worker spends more time with his work team than with his family. In some groups the social life continues beyond work, e.g., parties, family meetings, and mutual help when needed.

There are many opportunities to climb the occupational ladder in the plant. Most of the team leaders, foremen, shift managers, unit heads, etc. have been promoted from junior positions of operators or maintenance workers to higher positions. The head of the employees' committee claims that only those who grew up with the plant can become heads and managers of units.

There are two trajectories for promotions. One through professional promotion - based on seniority, and second through promotion based on performance - given to

workers who have proven ability to manage and to take over responsibility.

The turnover is very low. The plant employs between 15-20 percent temporary workers, but most of its workers (more than 70 percent) have been working ten years and more.

The place attracts professionals and academic workers. There are 130 (10 percent) academicians, 80 out of them work in Sodom in production and various technical services and 50 work in Beer-Sheva, in Research and Development laboratories and in economic services (finance, etc.).

The spatial distribution of the workers shows that the employees from the lower levels of skilled work commute from Dimona, among them: operators of machines, technicians, shift workers, etc. The plant prefers to hire shift-workers from closer distance: Arad and Dimona, but for the regular work there is not any locational preferences. Workers from higher levels commute from Arad and Beer-Sheva, and most of the engineers and the managers come from Beer-Sheva and its prestigious suburb, Omer (see table 5.1).

A more profound look into the relationships between the spatial distribution and the seniority of the workers in the plant and based on interviews with employees may show an interesting phenomenon. As workers proceed from the lower level of the occupational ladder to the higher levels, they

TABLE 5.1

SPATIAL DISTRIBUTION OF WORKERS IN THE "D.S.W."

Occupation	Location			Comments
	Beer-Sheva	Arad	Dimona	
Vice General Manager	1			
Top Managers	8	2		
Administrators	40	33	29	See comment A
Academicians	62	21	2	
Technicians	29	16	8	
Foremen	42	38	58	
Professional Workers	119	77	160	5-other places
Shift Workers	28	83	102	
Students	6	1	2	
Apprentices	2	1	14	8-other places
Subtotal (in Sodom)	337	272	375	
in Beer-Sheva	263	-38	-25	
TOTAL:	600	300	400	

Comment A: The administrators in the higher level and the more veteran ones come from Beer-Sheva, next are from Arad and the junior and the newest ones come from Dimona.

move from their place to a location with high prestige, and better social and educational facilities. People will move, therefore, from Dimona to Arad, or Dimona to Beer-Sheva, or from Arad to Beer-Sheve (especially to Omer). (See table 5.2.)

Future plans. The D.S.W. is considered to be a secure place to work, but does not have major plans to expand. Plans talk about another 150 employees in the first stage of a new development, and another 100 in the second stage.

NEGEV PHOSPHATES LTD. (N.P.L.)

N.P.L. was founded in 1951 for the purpose of using the various mines in the Negev Desert. (These deposits are part of the great North African Middle East phospate belt which extends from Morocco in the west to Jordan in the east.) The Israeli rock phosphate is a sedimentary deposit, highly reactive, soft and contains exceptionally low quantities of impurities.

The products of N.P.L. are:

1. The main product is enriched rock phosphate which is produced and sold in three different qualities, each differs by mining location, enriching process and utilization, although they may sometimes be partially interchangeable:

TABLE 5.2

WORKERS SENIORITY AND PLACE OF RESIDENCE--D.S.W.

Employment Started in:	Beer-Sheva	Arad	Dimona
1953	21		5
1954	3	1	2
1956	1		18
1957	2		9
1958			3
1963	1	5	3
1964	15	13	12
1965	8	4	10
1966	8	4	4
1967		8	2

a) Washed "Zin" phosphate, mined and processed in the Zin valley, it is suitable for the manufacturing of phosphoric acid which is the major user of phosphates, for superphosphates and fertilizers.
b) Direct application "Arad" Phosphate, mined and processed in the Arad and Makhtesh Mines
c) Calcined "Oron" phosphate, mined and processed in Oron.

2. Deflorinated phosphate which is produced in Oron plant.
3. Purified "Arad" phosphoric acid. It is produced in the Arad plant.

A new phosphoric acid plant ("Rotem") is under construction in Arad.

Almost 87 percent of the phosphate consumption is used for fertilizers and the remaining 13 percent is used for various "industrial" usage such as detergents, food additives and insecticides.

The majority of the products, produced in Israel, are exported. In 1980, 88 percent of the total sales were exported, mainly to Western Europe. The volume of production is highly sensitive to the fluctuations in the workd market of phosphates dominated by Morocco and the U.S.A. The activities in the market depend on one hand upon the grains market, and the yearly weather, and on the other hand, on the fluctuations in prices, and differences among

rates of local inflation and the changing rate of the dollar. Nevertheless, N.P.L. is a company which has the largest export (in volume) in Israel..

The product is transported from the plants to Dimona and Arad by trains and from there to the port of Ashdod.

The structure of the production cost is:

raw material - 21 percent

energy and electronics - 23 percent

labor force - 23 percent

transportation and shipping - 18 percent

capital (spare parts) - 4 percent

capital (financing) - 14 percent

The various plants differ in the composition of their production costs, and therefore differ in their rates of profitability. Two of the N.P.L plants are currently losing money ("Oron" and part of "Arad") and are on the verge of being closed down because they lack relative advantage in the world market regarding their products and because both are energy and labor intensive plants which have to bear the increasing costs of energy. The solution for these two plants is to transfer to processes which demand less energy and to improve the quality of the product either by technological process or by looking for new mining areas, with better qualified phosphates.

Employment. N.P.L. employs in all of its four plants, including its offices in Tel-Aviv, some 1,692 employees.

The composition of the labor force by occupations is is shown in table 5.3 (it does not include the administrative staff).

The workers in the plants, are allocated between workers in mining and workers in the various production lines, processing the raw material.

The spatial distribution of the employees is shown in table 5.4.

The work conditions in terms of wages, social benefits and various fringe benefits are not as high as in the "Dead Sea Works." The average salary is $8000 per year (February 1981), in comparison to $11,000 in D.S.W. Today, there is a tendency in the company to raise the salaries since for the last few years they have not been increased due to problems encountered by the company.

In terms of other work conditions, the commuting cost and half of the time of commuting is paid. There is an incentive bonus of 15.7 percent which is paid to all employees, and therefore has lost its effectiveness since it operates as a salary addition rather than incentive instrument. There is a tendency today to introduce an individual incentive bonus in each plant, though in some plants it is quite technically difficult.

There are complaints about the quality of the labor force in the plant. Managers claim that the "cream" of the labor force in the area is attracted to the D.S.W. plants

TABLE 5.3

COMPOSITION OF THE MANPOWER — "N.P.L."

Occupation	Quantity	Percentage
Chemists	40	2.7
Engineers	86	5.9
Academicians	31	2.1
Technical Workers	129	8.8
Subtotal	286	19.6
Other Occupations	1179	80.4
TOTAL	1465	100.0

Source: Internal document, October 1980.

and the least capable ones come to N.P.L. They think that with a better labor force more could be produced. There is a chronic shortage in professionals: mechanics, electricians, mechanical engineers, etc.

Another complaint is against the tenure laws which do not allow firing tenured employees which do not satisfy the requirements. The consequences of such arrangements are low work ethics and lack of motivation to work.

The work ethics differ in the various plants. It depends on level of technology, and on the profitability situation. In "Oron" for example, when there were difficulties in marketing employees were working very hard without much compensation. In "Arad" plant there are problems between the workers from Arad and those from Dimona. Those from Arad have higher expectations and therefore they are more frustrated. There is also competition and jealousy between the workers from these two locations which one of the previous managers thinks is a result of the attitudes they bring from their place of residence, especially from Arad. The same manager claims as well, that more can be done in terms of job enrichment especially for those who operate the machines, in order to achieve higher productivity. More incentives should be available, responsibilities should be shared, and more personal evaluations should be conducted.

TABLE 5.4

SPATIAL DISTRIBUTION OF THE WORKERS — "N.P.L."

Location	No. of Workers	Percentage
Dimona	776	46
Beer-Sheva	391	23
Arad	243	14
Yerucham	174	10
Tel-Aviv and the Center	108	7
TOTAL	1,692	100

Source: Letter from the management, 2.10.81.

Future plans. In the short run, "Rotem" a new plant will be operated. Another plant "Rotem 2" which will employ 200 employees is planned. In case "Oron" is closed down because of unprofitability, another plant in the same location will be operated with the same workers. There is also a plan to increase the production in Zin by 50 percent.

From the point of view of employment, another 300-400 workers will be employed in the next five to eight years.

PERIKLAS

"Periklas" was established in 1972 as an "approved plant." It is a subsidiary of I.C.L. (70 percent) and Austrian owners (30 percent).

The main product produced by "Periklas" is magnezium oxide with a high grade of purity. Its main use is in the manufacturing of fire-resistant material which is used to build industrial furnaces, and for some special use in the rubber, ceramics and pharmaceutical industries.

The main raw material is brine from the Dead Sea. The structure of the production cost is:

raw material and transportation of raw material and final product - 32 percent

energy - 45 percent

labor and transportation - 19 percent

other costs - 5 percent

The plant exports 99 percent of its product. Seventy percent of the product has to be sold to the Austrian owners and the rest is marketed by the company, which makes nice profits out of this small share.

The relative advantage of the plant is in the high quality of its product, therefore, it actually determines the price in its market. If the gap, from quality point of view between the plant and other plants in the world will get narrower, or if the demand for steel decreases the plant may get into marketing problems.

Employment. The plant employs 180 permanent workers and another 50-70 employees through subcontractors, who are in charge of maintenance, sanitary services, food, guarding, gardening, etc. Most of the permanent employees are skilled and professionals. Eighty to eighty-five percent are in production and maintenance jobs, and the rest are in administration. The turnover is very low (10 percent-15 percent). The plant is known for the good relationships among the workers and the management.

The spatial distribution of the workers is: 80 from Arad, 20 from Beer-Sheva and 70 from Dimona. No one among the engineers comes from Dimona. The production engineer comes from a regional center, 90 km. south of the plant (Merkaz Sapir), no one comes from Yerucham since the plant "could not find any suitable worker from Yerucham." The plant prefers to hire workers who live close to the plant.

The wages are lower than in the D.S.W. but the good labor relationships eventually compensate for the lack of generous economic rewards. The workers get, as the workers in the other raw material plants 25 percent addition to the wage, which is called "dust addition." The wage system is based on a system of incentive bonuses on an individual basis. There are three shifts of work. The plant pays for transportation and subsidizes training and extension studies for its employees.

Sixteen women are employed, mainly in administration and research (R&D unit).

I.C.L. - Vocational School

On the boundaries of "Periklas," a new vocational school was inaugurated this year. The main objective of the school is to train workers for the regional plants. The principal target group is the employees' children. Some 150 students have begun their studies, but only a fraction consists of employees' children.

The main areas of study are: maintenance of machines, welding, molding, general locksmithy, etc.

The school operates with six classes: two for grade 9, two for grade 10, and one for each of the 11th and 12th grades.

The studies include theoretical and practical aspects. Starting at the 11th grade, the students work two days in the plants, and at the 12th grade, they divide their

time between school and work. For their work they get salaries.

Most of the students come from Dimona (80), the rest come from Yerucham (11), Beer-Sheva (18), Arad (12).

The Chemical Industry - Summary

The industrial branch of mining, quarrying and non-metalic minerals is largely influenced by the development of demand and prices on the world market. This is one of the most capital intensive branch groups and it therefore has a relatively high weight with regard to capital stock when compared to its other aspects. Nevetheless, this weight is also declining, as there has recently been a steadily increasing exploitation of past investments.

The three I.C.L. plants described previously are dominant part in this industrial branch. All three are capital intensive, and in order to create new vacancy per workr the capital investment needed is between half a million to a million dollars, and all three are highly dependent on energy cost (up to 45 percent of the production cost). They differ in the product and hence in their markets, profits and their employment policy including wages, fringe benefits, etc.

Employment in all three plants is desired by the residents of the region, inspite of the harsh work conditions, all three plants pay high salaries and fringe benefits. The most desired one is the "Dead Sea Work" and after it "Periklas" and "Negev Phosphate."

The differences in desirability stem from the different images of the work conditions, the qualifications of the jobs like: opportunities for occupational mobility, interesting jobs, etc., but mainly the wages and the various fringe benefits. The workers' committees in each plant fight for equal conditions in all of them, but not all plants can provide the same economic rewards. Each plant joint the I.C.L. with its own history and product, and it is especially difficult for N.P.L. to equate with the other plants since it has encountered the most difficult economic problems.

As a result of the employment policy, dictated by the Ministry of Labor and Welfare, the three plants "belong" to different local employment agencies and therefore the spatial distribution of the workers is highly influenced by this arrangement rather than by "free" movement of employees. "Negev Phosphates" "belongs" to the regional employment agency of Dimona and Yerucham and therefore has the greatest share of workers from Yerucham and Dimona. The other two plants "belong" to the employment agencies of Arad and Beer-Sheva and get their employees from these locations.

There are no workers from Yerucham in the "Dead Sea Works" as well as in "Periklas" as a result of this policy and consequently lack of commuting arrangements between Yerucham and the plants.

Another arrangement which prevents free movement between the plants is an agreement between the plants not to hire ex-employees, and not to take employees from one another.

The future of this branch will no doubt be dictated by developments in the international markets. There are however, promising prospects for expanding the export of minerals, though this will depend on the extent to which energy problems will be solved, and whether additional processing phases will be successfully developed, rather than exporting local natural resources in their primary state.

From an employment point of view, a further expansion means: 15 workers in "Periklas," 150 new jobs at the first stage and another 100 at the second in "D.S.W." (approximately five years) and between 300-400 new employees for "N.P.L." (approximately five to eight years).

CHAPTER VI

THE SUITABILITY MODEL

6.1. The Theoretical Background for the Model

The objective of this study is to explore the meaning of "suitable industries for non-metropolitan communities" in a dynamic context (over time). The study strives to construct an operating definition for "suitability" which can help in evaluating undergoing industrialization processes as well as creating a planning tool for designing and implementing industrialization policies.

The notion of "suitability" consists of two basic components:

1. The suitability of the community--its location, infrastructure, services, labor force, etc.--to the industry.
2. The suitability of the industry to the community, i.e., an industry which exploits, among other things, the relative advantage of the community's labor force mix. (For a detailed analysis of the notion of suitability, see paragraph 6.2.)

Stating the notion in this way, divides the issue of industrialization into two separate processes taking place concurrently, each one with its own nature and pace. On one side the community changing over time as it develops, perceiving the industry as another mean (besides education, housing, welfare programs, etc.) for community development over its stages of development. On the other side, the industry "playing" according to different roles, has its own dynamic development over time, and strives--at least, in accordance with the classical location theories--to maximize profits exploiting relative locational advantages.

The task of the government which will be discussed later is to mediate between the two "entities", the community and the industry, and to ease an integrated way in which both will benefit.

A distinction should be made between "social development" and "economic development". "Social development" is a policy that seeks to help areas regardless of their potentials, because they are lagging behind. "Economic development" is a policy to stimulate actual and potential development in the economy (Klaasen, 1967, p. 20). Population dispersal policies may be regarded as part of the 'social development policies,' but industrialization policies specifically, belong to the group of "economic development" policies. Therefore, government as implementor of national objectives has to provide conditions and to

implement policies which will enable successful industrialization process for the advantage of the community in a minimum economic cost.

The following chapter will describe and discuss the notion of "suitability" from three angles: the community, the industry and the government. In the first two cases it will specify the objectives of each group, the characteristics of a "suitable" industry according to the particular group, and will discuss the issues and conflicts raised. The third part will discuss government's role.

6.1.1. The Community

The major factor which should be considered before the particular characteristics of the "suitable" industries are specified is: what are the objectives the community wishes to achieve through industrialization. Various plants and mixes of plants serve the objectives differently.

The objectives can be one or any combination of the following:

1. Strengthening the economic base of the community and increasing the standard of living.
2. Advancing the community socially, culturally and technologically.
3. Encouraging immigration and discouraging emigration.

The last objective calls for further specification of the objectives, namely, what are the target groups? There can be two distinct groups:

1. The existing community and its labor force, with the subgroups of:
   a) Males, heads of families (ages 22-45)
   b) Youth, and especially those who were recently released from the army (ages 16-25)
   c) Women
   d) Elderly

   When objectives are targeted towards these groups, the main objective is to prevent emigration. The division to subgroup is crucial since different industries "suit" different groups.
2. The future immigrants to the place. The labor force of the desired groups of newcomers may have different characteristics compared to the existing ones, and therefore the notion of "suitability" may differ from the one applied to the current residents.

The following characteristics of industries will be explored in order to define "suitability" from the community point of view:

a. Factor intensity: capital versus labor
b. Technology
c. Size of a plant
d. Diversification
e. Growth and change issues
f. The plant's characteristics
g. Wages

a. Factor intensity: capital versus labor

The issue of the factor intensity of the technology chosen for industrialization is a highly debatable issue, i.e., which one of the two will contribute more to the development objectives? It is quite clear that the answer depends on the objectives specified, and on the conditions and alternatives available.

The basic argument for capital intensive industries is that they increase G.N.P. per worker and therefore accelerate the rate of development. It is based on the premise that a cummulative increase in production and national income stem from ever increasing productivity of labor. This increasing productivity can only come about through the adoption of increasingly efficient techniques and appliances, requiring heavy application of capital. As a result they are identified with large-scale industrial production of "heavy" or capital goods.

Some other characteristics of capital-intensive industries: employment of highly professional and skilled workers, need for high quality of infrastructure and services and in some countries, capital intensive industries, rely on their own access to raw material (steel mills, petrochemical plants, etc.) rather than on other industrial plants (Kaynor and Schultz, 1973, p. 124).

The basic argument for labor-intensive industries is that they employ or re-employ as many workers as possible

(Klaassen, 1967, p. 15). Labor-intensive production is assumed to be of small or medium scale of operation and to make "light" consumer goods. There is also the view that establishing small-scale industries is a natural first step whereby skill, technique and markets may be developed for subsequent large-scale operations.

Other characteristics of the labor-oriented industries are: reliance on cheap, unskilled or semi-skilled labor force, and low level of wages which means smaller economic multiplier effect on the location and the region.

In the debate between the two technologies it should be stressed that labor-oriented industries do not necessarily contribute most to local employment when secondary employment created by new industries is taken into account. A capital intensive industry might create so much additional employment in auxiliary industries that its contribution to total emplomen is actually larger than that of the labor-oriented industry. Nevertheless, labor-oriented industries give an <u>immediate</u> contribution to local employment while capital intensive industries, if they contribute, do so only in the long run.

As it was discussed before, the selection of the specific factor-intensive technology should be dependent upon the objectives (income versus employment) and on the available supply of capital and labor in the specific location.

Owens and Shaw (1972, pp. 106-110), indicate that countries which have experienced the highest increasing rate of industrial product were the countries which have chosen a technology which fits their local ratio of available capital and labor.

While this paragraph has discussed the suitable technology to achieve development objectives, the next one will dwell on the suitable technology that should be used in order to exploit the available factors of production in an optimal way.

b. Technology

The issue of suitable technology or as it is defined in the literature as "appropriate technology" is highly dependent on the previous issue discussed of factor intensity.

Many of the problems of less developed countries (L.D.C.), such as high and rising rates of urban unemployment, slow growth of employment in manufacturing and high and rising capital/labor ratios, are attributed to the failure to choose the appropriate technology (White, 1978).

In his book, "Apropriate Technologies for Developing Countrries," Eckaus (1977) argues that the only standard of "appropriateness" of technological decisions is in reference to the general goal of development (which was discussed in the previous paragraph). This approach to appropriate technologies has been criticized on the ground that he does

not consider the adequacy of the technology to specific factor endowments, informal restrictions and other institutional aspects of less developed countries.

A different perspective which examines the adequacy of the technology to factors--not mentioned by Eckaus--states the following issues (Anderson, 1979):

1. Can the support mechanism and organizational arrangements which go with the technology in one country be adopted to fit a new situation in a different place? This issue is covered by the literature on "Technology Transfer" which concentrates on the difference in factor intensity between the industrialized countries and the developing ones which leads to technical inefficienty (Marsden, 1970, pp. 475-502). For example: a machine that is economic with high wage rate and low interest rate may be uneconomic when interest rates are higher (or at least should be, but usually the capital is highly subsidized) and wages are lower.
2. An issue which deals with the non-material resource requirements of any technlolgy: for example, the question whether a technology developed with an hierarchical organizational arrangement in mind can be suitable for an area in which work has traditionally been organized along collective or cooperative lines.

3. Issue which has gained attention only recently, but has not been dealt with yet, like: self fulfillment, participation, quality of access to knowledge, etc., which have not been included among other measures of appropriateness in the process of applying technologies to meet human needs.

Anderson relates two important factors in defining suitable industries: the importance of selecting industries which will use appropriately the local resources, and the significance of the needs of the local level while contemplating industrialization. Two factors which gain a lot of attention in this study.

Anderson's approach is a part of a great body of literature first developed by Schumacher (1973) in the 1960s, who coined and advocated the notion of "Intermediate Technology." The essence of his theory--based on "Buddhist economics"--argues that the economics of the free market is not the appropriate mechanism for meeting the needs of individuals. Therefore, the appropriate values for decision making are the Buddhist ones of appropriateness of scale and the maximization of individual self-fulfillment. Consequently he advocates "Intermediate Technology" as a mean of production in developing countries. The intermediate technology is an advanced technology compared to the traditional techniques common in developing countries, but it is cheaper and simpler than the

sophisticated, capital intensive technologies in the advanced economies. If it costs £2 to provide a traditional workplace, and £2000 to provide a workplace in advanced industry, then intermediate technology is said to aim to provide a workplace for about £200 (Dickson, 1978, p. 15).

The technology is based on the available factors of production in most of the development countries: high unskilled labor intensity, small size, low level of education and scarcity of capital.

Since Schumacher proposes changing the nature of the job tasks in order to eliminate the waste of human beings in modern industry and to prevent alienation, this issue will be elaborated later in the paragraph on "The plant's characteristics" (paragraph f).

c. Size of a Plant

The optimal scale of an industrial plant differs according to the goals to be achieved, the same way the technologies chosen have to differ in order to achieve various goals.

The optimal scale of the plant was studied by many researchers (Toyne, 1974; Borts, 1968; Kipnis, 1976; and more).

Kipnis who has studied the impact of the size of a manufacturing plant on the amount of inputs purchased locally, has found that ". . . medium size plants, with an average employment of 150, seem to be the most beneficial

for the development of the town's economic base" (ibid., p. 299). He also claims that ". . . A very large plant in a very small town may cause a long delay in the evolution of the local supporting service infrastructure necessary for the attraction of new, small, and medium size industrial activities" (ibid., p. 301). This conclusion comes from the findings that large manufacturing establishments are autonomous and provide the services for themselves rather than relying on local suppliers.

The size of the plant has to be judged according to the goal but not independently from the product and technology chosen, since they are the major factors to determine the efficient size of the plant.

d. Diversification

Industrial diversification is another characteristic of industrial structures which has a significant impact on the economic base of any community in general, and on non-metropolitan communities in particular.

The advantage of diversified industrial mix are (Gratton, 1979):

1. Stability of employment and protection against severe fluctuations in economic activity. In highly specialized areas, a high risk results from a cyclical contraction of demand, or from the decline of the predominant industry.

2. A variety of employment opportunities is available which enables all sections of the labor force to be catered to.
3. Greater flexibility of resources. Resources can be transferred from one use to another in response to varying demand patterns in a region.

Diversified industrial mix increases the income level of the population and the attractiveness of the place to other immigrant groups.

If there does not exist a diversified industrial mix, each of the existing plants should compensate for it by having a variety of jobs and occupational mobility to enable occupational advancement (see paragraph f).

e. Growth and Change Issues

When the suitability issue is explored in a dynamic context, over time, the issues of industrial growth and change should gain a special attention.

Technology is constantly changing over time, and the growth rates of employment and output as well. All may have an effect on the industrial sector and the suitability of the labor force and the community.

Theoretically, various changes within the industry itself and in the production process and/or in response to external changes are likely to result in sarch for a new location which will fit the new demand for particular factor inputs. Generally, technical progress, for example, takes a

form which involves increasing labor productivity, so that the rate of growth of employment is less than the rate of growth of output. This phenomenon--output increasing faster than employment has been observed in many developing countries (Stewart and Streeten, 1976). In this case, the plant may seek a new location in which capital is cheaper than labor. But when non-metropolitan communities are involved the objective is that the plant will stay in the community and changes made either in the plant itself--adapting more labor-intensive technologies if justified from an economic efficiency point of view--or short-run changes in the community--for example, adding new plant to absorb the surplus labor force.

A rapid rate of change of technology may create a suitability problem since the community may not change at a parallel pace. On the other hand, a slow rate of change of technology may create a similar problem, in which the progressing community cannot find suitable jobs in the existing industrial sector. High rate of unemployment and permanent shortage in workers in plants in developing towns is a symptom of the phenomenon of laggard technologies in an advancing communities.

The capability of a plant to induce "spin off" is another characteristic which plants attracted to non-metropolitan areas should have. In their study on "New Manufacturing Firms and Regional Development," Johnson and Cathcart (1979), claim:

> Regional policies geared to the attraction of mobile industry--at least until recently--have not been selective in nature and have aimed mainly at the creation of additional jobs, without regard to the type of job involved. Clearly these policies have substantially increased the employment opportunities available . . . However . . ., it is important to note that the almost exclusive emphasis on the number of jobs created may reduce the possibilities for self-adoption if the occupations, industries and functions, for example, have low fertility in terms of 'spin-off,' i.e., the formation of new businesses by ex-employees.

Very little is known about the variations in the fertility rates of different occupations, industries, etc., but it may be plausible to suppose, for example, that spin-off is relatively higher in managerial occupations than in unskilled occupations.

f. The Plant's Characteristics

Since one of the main disadvantages of non-metropolitan industrialization is a small number of industries and lack of variety, the quality of working life in each plant is of a crucial importance compared to the metropolitan industries.[1]

The notion of "Quality of Working Life" (Q.W.L.) refers mainly to the relationship between workers and their work environment and includes a wide range of concerns among them:

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[1]This chapter is based on the following references: Naftali Golomb; Ogurén Stefan and Edgren Jan, 1980; Ben-Dor et al., 1976.

- Human engineering factors--the physical aspects of the machines and their suitability to the workers.
- Physical condition--noise, light, ventilation, heat, air pollution, etc.
- Hygienic condition--restaurants and dining areas, showers, toilets, etc.
- Aesthetical condition--colors, music, openness to surrounding landscape.

Job's characteristics:

- The physical efforts demanded by the job
- Job safety
- Shifts
- Distribution of earnings
- Job security
- Job enrichment and occupational mobility
- The opportunity to use one's capabilities to optimum on the job--jobs with challenge, satisfaction
- Adequate participation of labor in the activities of the enterprise, participation in decision-making procedures, organization of work, work's system, etc.

Studies that were conducted in plants which have reorganized their work systems to improve the quality of working life have reported on: decreasing rate of absenteeism, low turnover of workers, efficient production and lower costs of production and higher satisfaction among the employees.

It is worth noting that Q.W.L. indicators are used in the "dual labor market" theory to differentiate between the two markets, the "primary" labor market and the "secondary" one.

Radical "dual labor market" theories have emerged in the 1960s as a result of employment problems in central city's ghettos in the U.S. During this time, the definitions of labor market disadvantages have been revised. "Unemployment" has been solved through the greater prosperity at this time, but a new set of problems, defined by analysts and government officials as "underemployment" has been evoked. The concept encompassed those who were unemployed, those who were working full time at a very low level, those who wanted to work full time but could find only part-time work, those who wanted to work but had dropped out of the labor force, and those who seemed so unattached to primary labor market institutions that they were often missed by the surveys upon which employment statistics were based. The three defining characteristics of "underemployed" workers were their low wages, their relatively underemployed skills and their frequently unpredictable pattern of work. Each of these characteristics reinforced the others, joining to form a self-perpetuating cycle of underemployment (Gordon, 1977, p. 57).

In the U.S. over the past fifty years, according to the radical argument, the labor market has been dominated by tendencies toward "labor market segmentation"--towards the increasing compartmentalization of the labor market into sectors featuring different kinds of labor processes. The most important of these tendencies towards segmentation involves the emergence of a "dual labor market."

Underlying the development of the dual labor market lies a sharp split between two different kinds of working conditions. One kind of working experience involves what is called "primary labor process." Work is organized in different ways in the two processes. The work in the "primary" labor market (in its enterprises) is structured internally, there are job ladders, promotional channels, customary practices, a variety of jobs, high wages, employment stability and job security. The work in the "secondary" labor market is unstructured, there are no job ladders, few opportunities for promotion, unpredictable working relationships, primitive capital equipment, little variety in the range of jobs available and uniformly low wages (Piore, 1977).

The suitability of plants to the community should be judged according to these characteristics. Moreover, it was suggested that the existence of plants with "secondary" jobs has reinforced the phenomenon of "dual labor market" since they do not provide chances for the workers to advance (Spielerman and Habib, 1976).

g. Wages

There are two aspects to wages and earnings when non-metropolitan industrialization is considered: one is the individual wage of each employee and the second is the effect on the region or a locality.

The individual wage: In a study conducted in Israel (Bar-El, 1981), it was found that the level of wages and salaries correlates positively with the value added per worker. The higher the value added per worker, the higher are the wages. It should be noted, however, that high value added of an industry does not demand that the industry will have high level of academic and professional workers. The study mentioned above found as well that the correlation between the wage level and the percentage of academicians is rather weak. The study concludes that a plant--in order to have high value added and to pay high salaries--should not be constrained by the educational level of the labor force.

The region: The effect of the wage level in regional terms is through the economic multiplier effect, i.e., generation of income for the region above the value of its output. The prerequisites for an efficient economic multiplier effect are: residing of most of the employees in the region, a well developed service system for the plants--so that they will purchase their services locally--and strong linkages between the plants.

For maximization of the multiplier effect, there should be, therefore, a socioeconomic absorption of the plant in the region (see chapter on Government's policies).

6.1.2. The Industry

The main objective of the entrepreneur or the industrialist, as it is presented in the classical theories, is to maximize profit. In order to minimize costs and to increase profit he will take into account the locational factors but only in the sense that it helps him to optimize location and to contribute to the success of the plant, withouth considering the impact of the industry on the location (community or region).

Theories regarding optimal location have been developed since the end of the nineteenth century. Von Thunen, Weber (1929) and Lösch (1954), were the first ones to develop the theories based on distance and minimizing transportation costs. Weber has expanded the theory to include location of raw material, energy and market, but basically until a few decades ago transportation cost was the ground of the theories.

Later on, based on empirical studies, a new term of "foot loose" industries was coined to describe those industries which were found to be indifferent to distance and transportation cost as a result of the nature of their product. (For a sruvey of the development of location theories, see chapter II.)

The following paragraphs will discuss the main factors considered by the entrepreneur when location decisions are made to achieve maximum profit.[2] (The majority of the decisions taken have an impact on the input side of the production side. On the output side the accessibility to the markets and the connections with the consumers are considered.)

a. Size of locality and distance
b. Availability of inputs: Raw material, Labor force, Capital
c. Infrastructure: physical and social
d. The area's image
e. Product and technology
f. Management and entrepreneurship
g. Growth rate of industry

a. Size and distance

The size of the locality coupled with the distance has a strong impact on the production process (see chapter II). According to the classical theories, this impact relates to the availability of the optimum factors-ratio to be used in the production process to achieve maximum output at minimum cost.

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[2]The entrepreneur's objective is not always to achieve maximum profit solely. The viability of the plant or its sheer existence may be other motivations behind the industrialist's activities, especially in cases in which the government is highly involved.

There are three types of "distance" which should be considered: 1) The physical distance--the extent to which the plant is located at a distance from the raw material market, labor market and the market of the final product. 2) The accessible distance--roads, communication systems, etc. (will be discussed under "infrastructures"). 3) Mental distance--the sujective feelings regarding distance (see under "The area's image").

b. Availability of inputs

Raw material--availability of raw material or minimizing the transportation cost of raw materials is one of the factors considered in all classical location theories.

Labor force--the main factors affecting the availability of the labor force are: size, and the level of development of the locality (Don, 1979, p. 22). It is worth noting that labor and cost of labor will have an impact on locational decisions only in those firms in which labor represents a major part of the firm's total costs and displays relatively pronounced geographical variations. The size of the locality is not the only determinant when estimating the available labor supply for an intending employer.

> When it comes to the question of readily available labor supply for an intending employer, it is not the percentage of unemployment that matters, but the numbers available within a reasonable travel to work radius of the plant. (Davis, 1967)

Moreover, evidence suggests that new industry is not likely to recruit exclusively or even predominantly from the

unemployed. But rather to recruit from the employed, creaming off the better workers.

Another difficulty in identifying the potential labor force, especially in the case of female labor, is that the registered unemployment figures provide only a partial indication of the real situation. Many married women, in particular, do not register as unemployed.

The level of development of the locality coupled with the size will actually determine the adjustability of the available labor force to the requirements of the industrial production and the availability of technical and managerial staff. Don (1979, p. 23) states this availability as a cost factor since it may affect the production function through fixed items (investment in social infrastructure) or variable items (cost of transportation of managerial and technical staff).

Another factor to be considered when labor costs are considered is the efficiency with which labor is utilized. Output depends not only on the quantity of labor used in production but also on its productivity. Consequently, labor costs to industry are not adequately measured by the level of wage rates but rather by the level of efficiency wages, or wage costs per unit of output. As a result, labor productivity tends to exhibit stronger local variations than wage rates (Henderson, 1980, p. 161).

Capital--Government's financial inducements upon the relative cost advantages of different areas is the most common instrument to encourage industrialization in preferred areas (a detailed discussion of the inducements is in paragraph 6.1.3 on the government role). With the increasing substitution of capital for labor as a result of structural and technological developments, the availability of a large supply of labor has become less important to new industries while the availability of capital gained more attention.

c. Infrastructure: Physical and Social

The availability of various infrastructures: physical, social and administrative determines to a larger extent the degree of accessibility a place has. High degree of accessibility may help in "shortening" and overcoming distance and remoteness.

Under the tems "infrastructure," several issues should be considered: In the less developed countries, physical infrastructure means the provision of various services such as power, water and sewage. Deficiency in the provision of these services is a major source of handicap for the establishment of competitive industrial plants in rural areas (Don, 1979, p. 22).

In the developed countries, government can reduce the capital costs of industry not only by financial subsidies but also by the direct provision of fixed capital

in the shape of factory buildings, industrial sites and premises. Factory and land costs are an important factor in the location decision if they vary markedly over space and if their share of spatially variable costs is relatively high. Under such circumstances areas with cheap sites and premises will enjoy a pronounced cost advantage which will increase their attraction for incoming industries.

Although spatial variations in factory rents and rates exist there is no strong empirical evidence to suggest that such costs are a major factor in the location decision. Cameron and Clark (1966), for example, found that factory rents were ranked very low as an influence on the choice of site.

Such conclusions, however, do not necessarily mean that site and factory costs are unimportant for "foot-loose" industry. An industrialist may decide that a location with a site or building immediately available is satisfactory, although not as ideal for production as the optimal one where costs are minimized. A firm can derive important benefits from such a decision.

Another form of the necessary infrastructure which should be considered is the availability of services (locksmith's workshop, hardware supply, construction material, etc.).

Don mentions two other forms of infrastructure: administrative and commercial infrastructure and social

infrastructure. The first one is concerned with the administrative capabilities of the rural, non-metropolitan authorities, and the second is concerned with schooling, health and socio-cultural opportunities.

> Social infrastructure . . . is among the major qualitative determinants of the population, and has a decisive influence upon local accumulation of human capital and the availability of skilled, technical and managerial labor force for any meaningful industrial initiative. (Don, 1979, p. 23)

Social infrastructure has a strong connection to the area's image.

d. Area's Image

The image of an area can affect the location decisions of industry since environmental factors like the area's physical, social, cultural and economic environments, seem to be one of the significant considerations of "foot-loose" plants.

Behavioral theories were shown to incorporate sub-optimal decision making since they recognize that industiralists are essentially 'satisficers' who seek to attain certain aspiration levels rather than 'maximizers' seeking the optimum solution to their location problems. The idea that personal considerations can outweigh economic ones in location decisions is important because it recognizes that an industrialist's perception of an area can influence his choice of site.

The term "area's image" consists of three elements:

1. Image of the physical environment--a dull sight of a town or unattractive surroundings is unlikely to prove attractive unless the economic arguments in its favor are overwhelming. The importance of the physical environment depends on the type of the plant. As Klaasen (1967) has pointed out "the more footloose an industry . . . the more the nature of the general facilities offered by the area will be important."
2. Image of the social and cultural environment--this embraces features such as the quality of the cultural life as well as indicators of a social environment such as the demand for welfare services, social and demographic structure, etc.
3. Image of the economic environment--excluding availability and cost of labor which is quantifiable and represents a distinct factor input and cost of production, it includes characteristics such as militancy and perceived efficiency of the workforce, industrial relations, etc.

All three components of "image" are elusive and difficult to measure but undoubtedly they have an impact on the decision-making processs regarding location. These three elements actully form the notion of "mental" distance which cannot be overcome by relatively simple instruments (roads, communication systems, etc.) to overcome distance.

e. The Product and Technology

The product chosen determines the character of the plant--including the development of the product, marketing strategy and technology used.

In his book, Herbert (1976) indicates three ways in which the product has an impact on the technology and hence on the organizational structure of the plant:

1. The character and the volume of changes in the product over time--a product with stable demand does not need many changes regarding the production line, outputs and the structure of the product. While when a product needs changes the plant has to be constructed in a way to enable it.
2. Standardization--mass production enables specialization and training in specific tasks in the production line. The workers' task is easy to learn and the skill-level needed is low. The task of the maintenance workers in a mass production process becomes very important.
3. Level of output--size of services.
4. When the demand is steady for a long period the plant can specialize by buying specific equipment. Level of automation is quite high and production costs get lower. A division of labor is possible then for few tasks and specialization.

One of the major criteria in product and technology selection issues should be the availability of the needed input (quality of labor force, raw material) as well as taking into consideration market constraints, in such a way that the plant will be operated close to its technological optimum (Don, 1979, p. 30).

f. Management and Entrepreneurship

Most of the theory builders, despite many sensitive insights and distinctions with regard to specific problems, end up by stating that the creative (or achievement oriented, or rational or innovative) entrepreneur with his special talent is either present or absent in enterprises, and similarly, business performance is uniformly lack-luster and tradition-bound or it is innovative in all aspects (Kilby, 1971).

In trying to explore the lack of entrepreneurial and managerial forces, Kilby sees ". . . managerial and technological shortcomings as enduring impediments rooted in sociological variables on the supply side" (Kilby, 1971, p. 30)., i.e., from empirical evidence in underdeveloped countries it was found that entrepreneurial performance in roles involving exchange relationships and "political administration" is vigorous and effective, while on the other hand, entrepreneurs typically do not apply themselves with equal intensity or skill to their tasks in the realms of management control and technology.

A different perspective is taken by McClelland who suggests that a particular human motive, the need for achievement, promotes entrepreneurship, which in turn is a key to economic growth. The problem is how to increase levels of achievement motivation in people and in the community? Inspite of the enormous knowledge gathered in this area there is no defined tool to promote the need for achievement. The traditional tools may be working, e.g., more investment in everything from schools to roads to banks to steel mills--but they are working slowly and it is difficult to establish priorities among them.

While entrepreneurship may be looked upon as a given talent, managerial abilities are skills which can be purchased in the market place. Among them: marketing the product and responding to competition, mamagement of human relations within the firm, financial management, industrial engineering (minimizing inputs with a given production process), introduction of new production techniques and products, etc.

Industries in development areas need good management may be more than industries in metropolitan areas, which is able to compensate for the various disadvantages of the location, as well as to give special attention to the community and labor force.

g. Growth Rate of Industry

The growth rate of an industry is one of the main determinants in the decision to locate. The more capital intensive the industry and the more it requires skilled workers, the larger the impact of a relocation and the more reluctant an entrepreneur will be to adjust himself to changing locational factors. On the other hand, fast growing industries, may be found to be able to adjust themselves to changing conditions to a greater extent than slow growing industries for which the adjustment might often be a too costly proposition.

In any case, one should realize that the growth rate of an industry is not constant over time. It slows down when it reaches maturity. The slow growth of older industries (like textile and food processing industries) accompanied by impaired mobility is one of the main reasons for the existence of industrially depressed areas in many parts of Europe and the U.S.

This means, that when locational decisions are made they are based on factors which have operated in the past and might change substantially in the future. Therefore, when non-metropolitan industries are considered the nature of growth of the industry as well as its ability to adjust to changes in the community should be taken into account.

Issues and Conflicts

a. The individual and the community in the industrializaton process.

In almost every underdeveloped community, the phenomenon of outmigration--usually by the socially and economically stronger, and more capable residents--is a common phenomenon.

In a community, undergoing industrialization, the problem is that an individual who is climbing the occupational ladder in his plant and improves his socioeconomic status tends to leave the community either to reside in a more developed community in the region (retaining his old job) or to move to a more developed region, with better jobs.

From the point of view of the individual, this is a successful industrialization policy, from the point of view of the community, it means that the specific technology--the specific plant was not suitable for the community.

This means that "unsuitability" may stem from a "laggard" technology which implies that local people do not want to work in the plant, may look for different jobs in the region when available, or may leave the place. The "unsuitability" can also stem from a technology which is too advanced for the community and therefore does not employ local people, but hires workers from the whole region, or other regions.

There are high and low boundaries of technology which should be examined carefully by policy makers. Politicians tend to request "high technology" plants for their places in order to prevent outmigration and to encourage immigration to the place. The results may be found to be counterproductive, since the high-technology plant (or any other technology which does not suit the local labor force) may be physically located in the place but does not exploit the local labor force. Another issue to be considered is the various jobs demands like high work ethics, accuracy in performance, keeping the schedule which characterize these industries and which the local labor force is not qualified yet with these characteristics.

b. The Successful Plant--"Green Field Facory"

"Green field factory" is a term which was coined by a group of experts. It is defined as a socioeconomic urban enclave, situated physically outside the urban territory. Such an enterprise seeks usually rural environments in order to exploit specific resources located in the area, nevertheless, it may be operated with such technology and labor force mix, which may result in reducing the social and economic effects of the "green field factory" upon the region (Don, 1979, p. 33).

This is a description of a successful plant from the industrialist's point of view, but an unsuitable one from the community's point of view since it does not exploit and

serve the locality. This may stem from the unsuitable technology, i.e., the technology chosen is too advanced for the local labor force, and the plant has to look for workers in other localities and outside the region.

The effect of the economic multiplier is very small as well, since the workers do not spend their salaries in the place.

c. Regional versus Local Plants

The issue of the effectiveness of regional versus local plants for local development (rather than regional or national development) has been raised previously.

Regional plants enjoy economies to scale: larger population which enables intensified industrialization, bigger plants and sometimes higher level of technology when more skilled and professional manpower is available. The cost of infrastructure is lower since the physical infrastructure serves more plants, externalities from concentration of plants, etc. But, they may not give solution to specific local groups like: women, or elderly. Moreover, in a region which has communities in various stages of development the problem is: how to assure that the workers from the less developed communities will not occupy only the lower levels of the job ladder without many chances to climb up.

A distinction should be made between a regional plant which was planned to serve the whole region, and a

local plant which was planned to serve primarily the place it was located in. Some local plants turned out to be regional ones in terms of the spatial distribution of their workers. This may happen as a result of unsuitable technology, i.e., the local people are either over-qualified or under-qualified for the specific technology and the needed labor force has to be "imported" from outside the locality.

All of the issues raised so far, point to the problem of unequal pace of development of industries and communities, and the difficulties which rise in the industrializaton process.

A partial solution lies in social and economic community development. A well developed community attracts new residents and has a low rate of emigration. The problem is that community development is a long-range process. It takes years of enormous effort and investment of resources in order to rise the educational and welfare levels of the community's residents. On the other hand, the industry acts on relatively short range with the ability to adapt easily by changing technology, limiting growth, moving or closing down.

In order to achieve a successful industrialization process there should be a mediation and coordination between the two: the community and the industry. Governments are considered to be the most capable agency to undertake this task.

6.1.3. The Role of the Government

The lack of coordination between the community and the industry which stems mainly from the differences in the pace and direction of development, can be useful only by big public bodies like the government.

The reason why the government is so intimately involved in the process is that the government alone has the power to interface with the play of forces in the market and to alter comparative costs in the home market by supporting and sustaining new industrial plants through their birth pangs and early years.

The government has to create a situation in which a "suitable" industry for the community will be a "successful" one for the industrialist, while at the same time achieving the stated national goal of development.

There may be several national goals:

1. Maximization of employment
2. Maximization of the value added. Which means maximizing total new income created by the plant for the benefit of all factors of production.
3. Increasing export and the production of import substitution.
4. Maximization of profit for the producers of the principal inputs used.

Some of the objectives may be supplemented to each other, but basically they differ in the structure of the

required factors of production and in the target group they are aiming at.

The first objective is targeted towards the unemployed while the second objective can be achieved only by high price skilled labor which is usually in shortage in development areas, therefore it may attract newcomers to the region but will not solve the problem of the local unemployed workers. The same may be true for the third objective. Industries based on export were found to be less effective for development purposes, since the objective of improving the balance of payments may interfere with planning for development as a result of economic and political pressure in the short-run. The fourth objective may as well overlook the interests of the community to be industrialized (Bar-El, 1980, p. 19).

Government's policies are usually taking the form of subsidizing one or several factors of production: financial incentives, labor subsidies and infrastructure provision. In some other cases the raw material or the final product is subsidized.

The most common instrument used by the government to disperse industrial plants is to utilize financial incentives. The success of the policy depends upon the impact of the subsidies on average total costs in the preferred areas. If financial incentives are set at too low level they will extend the spacial profit margins insufficiently to incorporate the desired area.

The advantages and disadvantages of capital intensive industries were discussed in previous paragraphs as well as labor intensive ones. Except for the criticism concenring the factor intensity, planners criticize the directions to which subsidies are given, "Instead of building better schools and using public amenities to attract firms, many communities have extended direct financial involvements" (Hansen, 1980, p. 166).

The issue of subsidizing industries versus subsidizing infrastructure like schools and welfare amenities has a time dimension since the first one deals with the short run and the second with the long run.

Another criticism against the way governments encourage industries attacks the negligence of the time and growth considertions: ". . . In fact, the policies of many Western countries are static, being based upon the existing situation and paying little or no attention to developments overtime." (Klaasen, 1967, p. 19).

On the same issue of the different paces of development of the community and the industry, and based on the "filtering down" theory of location (Thompson, 1969, p. 8), Hansen suggests:

> The economic development of the smaller, less developed urban area would seem to require that it receive each successive industry a little earlier in its life cycle, to acquire the industry at a point in time when it still has both substantial job forming potential and high-skill work. Only by upgrading the labor force on the job and generating the higher incomes (fiscal capacity)

> needed to finance better schools can the area hope to break out of its underdevelopment trap. (Hansen, 1980)

Infrastructure provision is another common instrument used by the government (see paragraph 6.1.2.c.). Labor subsidies consist mainly of training and vocational education on one hand, as well as partial exemptions from taxes according to the region and its priority among national goals. In some cases housing and various social services are provided for the needed labor force.

6.2. The Suitability Model - The Theoretical Framework

The theoretical model, intends primarily to display the various factors taking place in the process of industrialization of the development towns. It describes--using a "sign diagraph"--the interactions among the various factors, and the interdependencies between them.

It is not a quantitative model, although some numbers and quantities can be applied to the variables. It is rather a heuristic model which describes the qualitative characteristics and relations of the system's components.

The model is centered around the notion of "suitability" between the community and the industry. It is hypothesized that the signs of crisis in the community in the development towns (see chapters IV and V for the description of the crisis), i.e., increasing rate of emigration from the towns, and in the employment area: the paradox of high rate of unemployment on one hand, and a shortage of needed workers on the other hand, stems from a development of "unsuitability" between the industrial plants and the community over the years.

The model was therefore built in order to throw light upon two major issues: a. The suitability of the community--its location, infrastructure, services, labor force, etc.--to the industry, in the sense that there are advantages for the industry to locate in the community so that it can exist and operate efficiently. b. The

"suitability" of the industry to the community, i.e., an industry which exploits, among other things, the relative advantage of the community's labor force mix. This type of "suitability" means that the industry (or the mix of plants in the community) will use the various qualifications of the labor force in terms of quality and quantity--the different groups of the labor force. It means also an industry which fulfills the communities' objectives in terms of economic and social progress.

Both notions of "suitability" takes into account the dynamic factor. Since the characteristics of the labor force are changing over time, the mix of plants should either be modified or the plants themselves should adapt to the changing nature of the labor force in the remote areas.

Each sector (the community and the industry) has its own unique pace and direction of behavior. It is therefore the task of a public body--or government to mediate between the two. It should facilitate an integrated way in which both will benefit and achieve their goals.

The underlying assumption which this study holds is that the only way to assure the implementation and the success of the objective to disperse the population, is by securing the welfare of the local residents. The objective of population dispersal can be justified from various angles, e.g., political, economic, ideological, etc. But, in any case, the target is to secure the well-being of the

individual in all the spheres of his life.[3] "Suitability" as one of the prerequisites for securing the well-being and welfare of the community and its individuals was put therefore in a central place in the model.

The following graph presents the main components of the framework and their mutual relationship. The main concepts of the model are:

1. "Actors" and their "Behavior"

There are three major actors in the model (represented by rectangular boxes):

a. The government

b. The industry

c. The community

Each actor has its own behavior and policies (square boxes):

a. Governmental policies

b. The behavior and the policy of the employer (manager and/or entrepreneur)

c. The behavior of the community in the development town, represented by the employees in the industrial plants.

2. "States" and "Outcomes"

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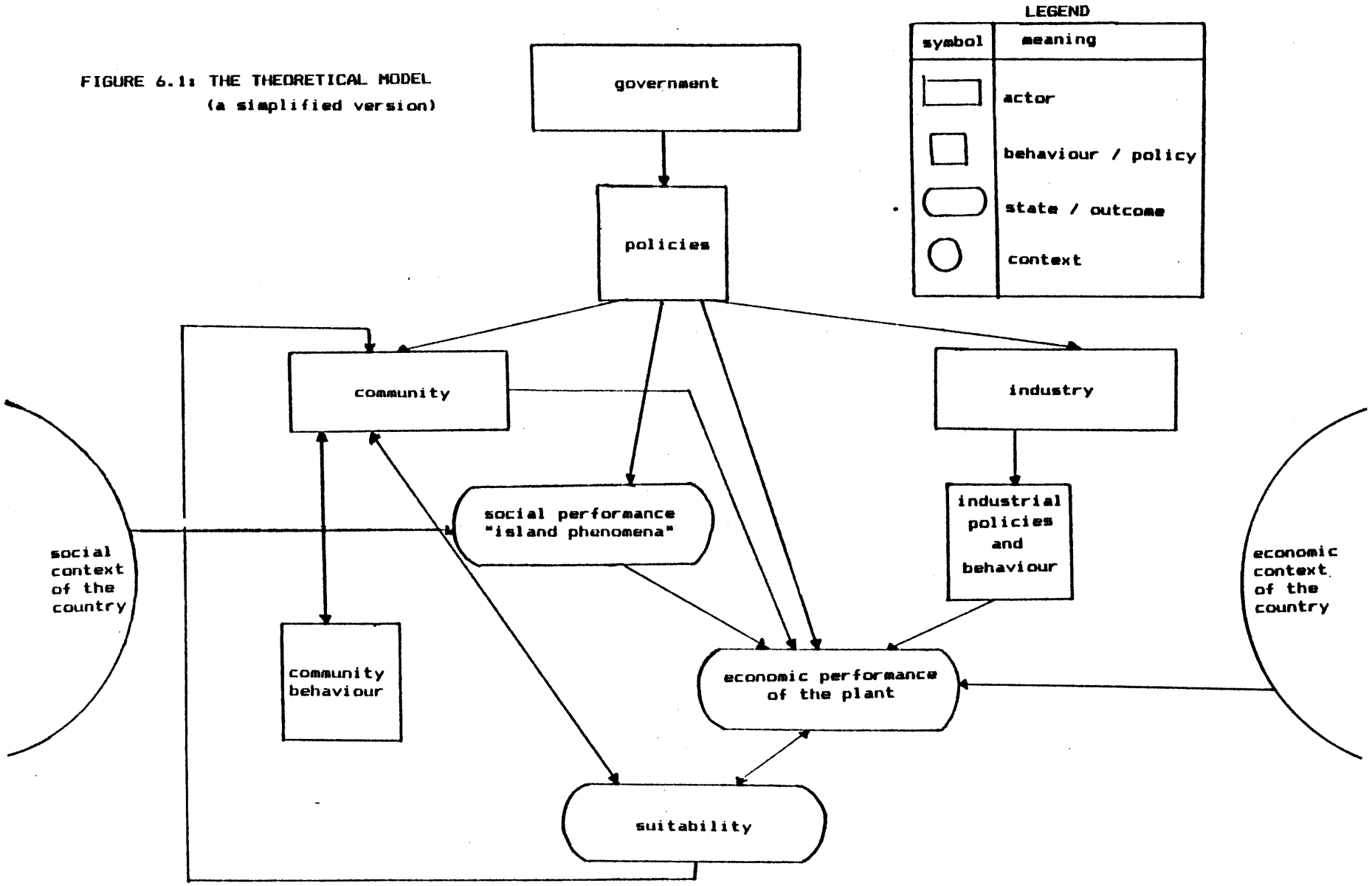
[3]For a more detailed analysis of the objective of population dispersal and its justification, see chapter I.

FIGURE 6.1: THE THEORETICAL MODEL
(a simplified version)



There are various "states" and "outcomes" resulting from the activities of the actors in the system (represented by oval boxes).

a. On the industrial side: "The economic performance of the plant"

b. On the community side: "The social performance of the community--the island phenomenon"

c. As an outcome of the whole system--"Suitability" and hence, "wages and salaries" and "quality of working life" (Q.W.L.)

3. "Contexts"

There are two "contexts" having the role of a "reference group" in the model:

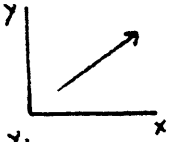
a. The economic context--describes the economic situation in the country, the economic development, industrial climate, etc.

b. The social context--represents the socioeconomic status of the people in the whole country, standard of living, as well as demographic, social and educational level. It includes also social norms and modes of life of the various ethnic groups.

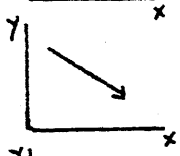
The following "sign diagraph" is a more detailed model. It shows the interactions between the various factors, using arrows (when applicable) to indicate the direction of the impact. Whenever the relationship is

mutual the arrow points to both directions. Whenever the arrow is dotted it means that expectations influence the relationship as well.

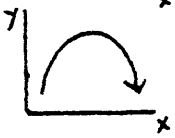
The small graphs indicate the nature of the relationships.[1] This nature can take the following forms:



1. - a "positive" relationship: when x increases, y increases



2. - a "negative" relationship: when x increases, y decreases



3. - a "maximum" relationship: a relationship which is first positive and later turns negative

4. - a "minimum" relationship: a relationship which is first negative and later turns positive

The detailed graph is heavily based on the previous part (chapter 6.1: "The Theoretical Background for the Model").

I. GOVERNMENT

Government's behavior is demonstrated through policies. Population dispersal policy is the critical policy in the suggested model. The national objective of dispersing the population--from the central parts of the country to the non-metropolitan areas--is the origin of socioeconomic-political policies implemented to achieve the

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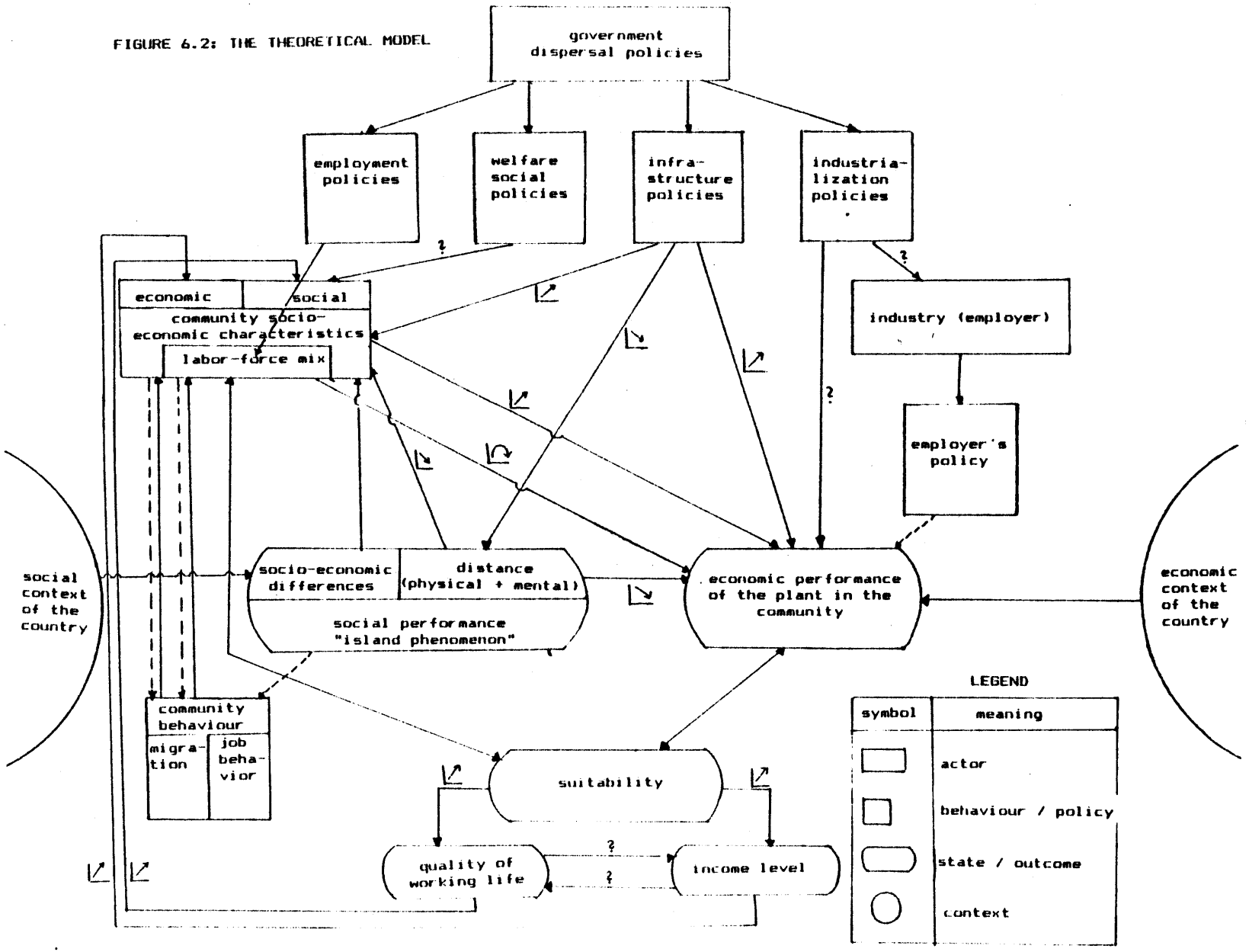
[1] Whenever the small graph is missing, it means that the nature of relationship is ambiguous (consult the individual explanation).

FIGURE 6.2: THE THEORETICAL MODEL



goal. Establishing the development towns, providing them with sources of employment, implementing welfare and social policies, all are measures, taken by the government in order to achieve and maintain the dispersal.

There are, therefore, four areas of policies which stem from the goal of population dispersal:

1. Industrialization policies
2. Infrastructure policies
3. Welfare and social policies
4. Employment policies

1. "Industrialization Policies." Industrialization policies include a wide range of policy tools and instruments to encourage industrialization in remote areas.

The instruments prescribed in general industrialization policies can be financial or non-financial in character. Financial instruments comprise low interest loans for newly locating industries, guarantees of interest payments, grants, tax-shelters, and subsidies in land and building costs. The non-financial instruments can be more general in nature and they are described under "Infrastructure policies," since they affect both the community and the industrial plants.

The government demonstrates its rank of priorities among national objectives and development regions by applying variable rates of grants and subsidies according to the government's preferences.

Industrialization policies to encourage industrial plants in the development regions have an impact on the economic performance of the plants directly and indirectly.

a. There is a direct impact on plants owned and operated by the government. They include mainly "national projects" like the "Dead Sea Works" or "N.F.L." In these cases the government takes active part in actually managing the plants.

b. There is an indirect effect through the "Entrepreneur's policy" on the "economic performance" of the privately owned plants, or those plants which are operated and managed as private enterprises. By implementing varioius programs, changing and creating biased price systems, the government influences the entrepreneur's decision process regarding the location of the industrial plant and the way it will be operated.

The nature of the impact of the two types of governmental policies on the economic performance of the plant is one of the key issues examined by this study. It is not clear to what extent the support, given by the government, i.e., grants, subsidies, etc., has a positive impact on the performance of the plant. Although this support is offered in order to compensate for the disadvantages to location, its quality and especially its timing is of crucial importance to the degree of succes, and this research studies the issue. Therefore, there is no

indication on the graph as to the nature of this relationship.

2. "Infrastructure Policies". "Infrastructure policies" are a very important part of the governmental efforts to encourage industrialization. Klaasen (1967) categorizes them under "non-financial" instruments, as tools which are more general in nature compared to the financial instruments:

> They include road, railway and communication's improvements as well as the development of residential schools, playgrounds, and shopping facilities, etc. Broadly, they seek to improve the economic, social and cultural "climate" of the area to heighten the general attractiveness as an area for new activities. (Ibid., p. 17)

Some other areas of activity should be added to the "infrastructure policies." Among them: energy policies, provision of electricity, power stations, transportation systems and especially networks of trains.

One instrument that deserves special attention in the present context is the "industrial estate." Governments can reduce the capital costs for the industry not only by financial subsidies but also by the direct provision of fixed capital in the form of factory buildings. Factory and land costs may play an important role in the location decision if they vary markedly over space and if their share of spatially variable costs is relatively high. Under such circumstances, areas with cheap sites and premises will enjoy a pronounced cost advantage which will increase their attraction for incoming plants.

These various policies affect the community and the industrial and economic activities in the area in various ways. It is impossible to evaluate the direct impact of each "infrastructure policy" on the different factors, as well as making distinctions between short and long range impacts.

In the suggested model, infrastructure policies have an impact on the various components of the system. First, the policies have an impact on the "physical" and "mental" distances as a part of the "island phenomenon." As this study suggests,[5] there are three kinds of "distance." They are: a. The physical distance--the distance itself. b. The accessible distance--the various means to overcome distance. They include: roads and railroads on one hand and communication systems (like telephone) on the other hand. The rate of public transportation can be also included under this category. c. The mental distance which is the result of the physical and the accessible distance, coupled with socioeconomic differences.

Infrastructure policies have, therefore, an impact on three components of the model. First, they have an impact on the physical distance (part of the "island phenomenon"). The relationship between the policies and the "distance" is of a negative shape since increase in the

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[5]See chapter 6.1, "The Theoretical Background for the Model" on the various meanings of "Distance."

resources invested in infrastructure "decreases" physical and accessible distances. Second, the policies have an impact on the infrastructure of the community ("positive relationship") and finally, they affect the "economic performance of the plant in the community" (positive relationship).

3. "Welfare and Social Policies." The government affects the community through various programs and subsidies given to welfare and social services. These include a wide variety of education programs from childhood to old age, social programs aimed at poor and needy families, welfare programs to the whole community, etc. (This variable does not include welfare payments to individuals.) The main objective is to improve the well-being of the community, which will insure the continued existence of the town.

The nature of the relatioship between the welfare and social policies and the community socioeconomic characteristics is not unequivocal. It is not clear whether more programs and subsidies to change the socioeconomic characteristics of the community actually improve (positive relationship) the situation. Thus, there is no indication as to the nature of the relationship between the two. In the analysis this issue will be discussed according to the data.

4. "Employment Policies." The fourth type of policy which stems from the general goal of "population dispersal"

is employment policies which have direct effect on the labor force, its quality and quantity. The overall policy is in charge of training, vocational education and of matching between employees and sources of employment.

These policies have an impact on the administrative and social infrastructure of the community. The first one is concerned with the administrative capabilities of the non-metropolitan authorities, and the second is concerned with schooling, health and socio-cultural opportunities.

Employment policies have also an impact on the spatial distribution of the workers, since they set regulations and rules regarding hiring procedures. This in turn affects the quantity and quality of the labor force in the industrial plants, and indirectly the "economic performance in the community."

II. INDUSTRY

The "industry" is the second "actor" in the suggested model. The industrial sector consists of: a. The "actor," which is the employer. b. The "behavior" and the policies implemented by the employer (manager and/or entrepreneur). c. The "outcome"--the "economic performance of the plant in the community," and "suitability." The industrial sector as a whole is affected by the "economic context of the country," which is an indicator of the economic situation--the economic development and the

industrial climate. It has an effect on the entrepreneur's decision process, as well as on the probability of the plant's success. In a more detailed way, the components are:

1. "The entrepreneur's policy." This is a variable which describes the entrepreneur's behavior and includes the main factors considered by the entrepreneur when location decisions are taken to achieve some degree of economic viability (rather than maximum profit--an issue which is discussed in chapter 6.1). It includes: size of the locality, distance and its implications, availability of inputs (raw material, labor force, capital, etc.), the physical and social infrastructures, the area's image, product and technology as well as decisions taken concerning management, growth rates, financing, etc. (all factors were specified previously in chapter 6.1). The entrepreneur policy has an impact, primarily on the probability of the plant to exist and be viable. The entrepreneur is heavily influenced by the reality created by the governmental policies to encourage industrialization and by the industrial climate in the country. The industrialist responds to the biased price system created by the government to encourage industrialization in a specific region or a preferred sector.

As was discussed before, it is not clear what is the nature of the relationships between the governmental

industrialization policies and the decisions of the entrepreneur.

2. The "economic performance of the plant in the community." This is a variable which is defined in the model as an "outcome." The extent to which a plant achieves economic viability depends upon

a. "The entrepreneur's policy and decisions." In addition to the entrepreneur's decision process, the economic viability is affected also by the expectations of the entrepreneur (dotted arrow) as was discussed in chapter 6.1.

b. "Industrialization policies." A direct impact on the plants owned and operated by the government. It is not clear what is the nature of this relationship. This is part of what the study tries to find.

c. "Infrastructure policies"--have a positive impact on the economic performance of the plant since they help to alleviate the distance and communication problems.

d. "The community socioeconomic characteristics." The community has an impact on the economic performance of the plant in two ways. The first one is through the impact of the physical, social and administrative infrastructures which are determined by the socioeconomic characteristics of the community, i.e., it is assumed that a community characterized by higher income, higher level of education, smaller families, etc., will have better infrastructures,

and these in turn will affect positively, the economic performance of the plant. The second, more direct impact is through the "labor force mix," which is a segment of the community. It is assumed that the relationship between the labor-force mix and the probability of the plant to perform successfully, takes the form of "maximum relationship," i.e., as the quality of the labor force improves, it has a positive imapct on the economic success of the plant. When the quality of the labor force begins to be overqualified for the existing plant and its technology, some workers may move to more technologically advanced plants (staying in the community and commuting) or may immigrate altogether. It has then a negative impact on the economic success of the plant. The overall effect of the labor-force mix is therefore positive at first and negative later (when measured overtime) and the sign is therefore of a "maximum" shape.

It should be added also that the relationship between these two components is reciprocal, although indirect (through "suitability"). The degree of economic performance of the plant has undoubtedly an effect on the quality of the labor force, but the effect depends on the degree of suitability of the plant to the community. A plant which is economically successful does not always have a positive impact on the labor force since the "Quality of the working life" in the plant can be low and everything is

compensated for by material and financial rewards. (This issue will be discussed under "suitability.")

e. "Distance"--the distance in its physical sense has an impact on the probability of the plant to perform successfully. Thie impact is usually of a "negative relationship" since as distance grows, there are more disadvantages to location and the probability to succeed decreases. Nevertheless, if the plant enjoys a high rate of governmental protection in the market due to its physical remoteness it may eliminate the negative effect of distance.

f. "The economic context of the country." The stage of economic development in the country, and the industrial climate have an impact on the economic performance of the industrial plant. The relationship between the economic performance of the plant in the community and the economic context of the country, can be depicted as "minimum relationship" in which, the relationship is negative at the beginning and then, turn to the positive.

In this study, it is suggested that at the initial stages of industrial development there is a rough competition among all "infant" plants. All compete for a limited amount of governmental (loans and grants) and national resources (venture capital, managerial and professional work force, etc.). There is, therefore, a "negative" relationship. As the probability of the plants

in the country to succeed increases, the probability of the plant in the community to succeed decreases. This is a "substitution" effect among the two types of plants. The "negative relationship" continues up to a "take-off" stage in the economic development of the country. When it "takes-off," governmental assistance to other plants decreases, and more resources may be left for the "infant" and existing plants in the developing areas. Moreover, the progress and the success of the other industrial plants in the country indicates a healthy economic situation, which benefits all. The relationship turns to be therefore positive.

Embodied also in the "minimum relationship" shape of the graph, the situation in which changes in the national priorities affect differently the various industrial sectors, i.e., when "population dispersal objective" gets top priority, more resources are channelled to development areas, and their industrial economic success is more secured. At that point, less resources are transferred to other industrial plants in the country, and their economic success is more doubtful.

In the suggested model, the "economic performance of the plant in the community" has an impact mainly on the outcome--"suitability." The relationship between the two is reciprocal since the degree of "suitability" has an impact on the economic performance of the plant as well. It is

assumed that as the plant performs more successfully from an economic point of view, it is more suitable since more wages and salaries are paid, nevertheless, this assumption should be analyzed carefully: First, high salaries and wages do not always mean high and improved Q.W.L. Employees may enjoy the material rewards but will not benefit from interesting jobs and chances to advance--which is the second requirement from "suitable" industy. Second, the workers who will gain economic power from their work in the plant, will find out that they can afford living in communities with higher standards of living and may decide to emigrate to different communities. This may happen, when, on the one hand, the plant constributes economically and increases the economic power of the community while, on the other hand, governmental policies to improve the social and educational level of the community are lagging behind.

There is another factor which should be considered when the "economic performance of the plant" and its impact on suitability is discussed. It is believed, that if the plant is very successful economically, it may decide to move to a different location--closer to the central part of the country since it does not need anymore governmental assistance due to its location in the development area, and it can benefit from the locational advantages in the central parts of the country. The emigration of the plant is "unsuitable" to the community.

As was suggested, the relationship between the two components is reciprocal. "Suitability"--in its second meaning, i.e., the "suitability of the community to the plant"--affects the "economic performance of the plant in the community." It is assumed that when the community is more suitable to the plant, e.g., its labor force, infrastructure, etc., the probability of the plant to succeed is higher. (See discussion on the issue of "suitability" in the last part of this chapter.)

III. THE COMMUNITY

On the side of the community there are also four components:

1. The actor--the socioeconomic characteristics of the community in the development town, but mainly the labor force mix (the employees) which is a segment of the community.
2. The behavior of the community and the labor force--there are two types of behavior: emigration and immigration by the community, and the job-behavior by the labor force.
3. "Outcomes"--the main outcome is the "social performance of the community" of which the "island phenomenon" is an important dimension.
4. "Context"--the social context of the country.

In the following pages, the above subjects will be discussed:

1. The "socioeconomic characteristics of the community"--the community in the development town is characterized by two structures, which altogether give some indicator to the "community socioeconomic characteristics." The two structures are:

a. "The social structure of the community"--this includes the social and demographic characteristics of the community. The social structure includes also the various social services existing in the community like: schools, day-cares, kindergartens, etc., as well as amenities like: theatres, cultural centers, swimming pools, etc. All are institutions and facilities which give some indication of the standard of living in the town. There are two main factors influencing specifically the social structure: "governmental policies" and the "quality of working life" in the industrial plants.

- "Governmental policies"--three kinds of policies have an effect on the different segments of the population and on the social services provided by the community. Social and welfare policies may influence the education level, skills and occupations of the community and hence the qualify of its labor force. Employment policies will influence directly the quality and quantity of the labor force, and to some extent the rates of employment and unemployment. The

community, both its social and economic structures, is influenced also by "infrastructure policies."

- "Quality of Working Life" (Q.W.L.) in the industrial plants--In the suggested model, Q.W.L. has a significant impact on the quality and quantity of the labor force, and hence on the well being of the community. (This issue will be discussed under "Q.W.L.")

b. "The economic structure of the community"--This includes the economic characteristics of the residents of the place. The economic structure is affected mainly by the wages and salaries paid by the industrial firms which are determined by the economic success of the plant. The wages and the salaries contribute to the economic power of the community, which determines the volume and the quality of the various economic services, i.e., stores, commercial services, banks, etc.

The two structures specified above describe the "community socioeconomic characteristics" and gives some indication to its "well-being."

Labor-force mix--the "labor-force mix" is the segment of the community which participates in the labor force. In itself there are several segments: males-heads of families (ages 21-60), ex-soldier, youth, women, elderly, etc. As such, they have the "community socioeconomic characteristics" in addition to the specific characteristics as a segment of the labor force.

The "community socioeconomic characteristics" and the "labor-force mix" have an impact on the "economic performance of the plant," as the community well-being improves, indicated by the changes in socioeconomic characteristics, this means a better environment for the plants and higher probability to succeed. The same is true for the impace of the "labor force mix" on the economic success of the plant in the community. The extent to which the local labor force fulfills the plant's specific needs (in terms of quality and quantity) for the employees, expresses the rate of suitability of the community (its labor-force mix) to the industry. (See, under "Suitability.")

There are reciprocal relationships between the "actor" the community and the "outcome" the "island phenomenon" as well as between the community and the "behavior"--"migration and job behavior."

3. "Outcome"--the "island phenomenon." The "island phenomenon" is defined as a situation in which the community in the development town has characteristics of developing societies in the midst of a country with characteristics of well-developed societies. The phenomenon from socioeconomic point of view, is measured by objective measures: differences in social, educational and economic structures between the development towns and the rest of the country (see chapter IV) and by "subjective" measures--the feelings

of seclusion and remoteness--by the residents of this community.

The "Island Phenomenon" in the model consists, therefore, of two components:

a. The "Distance"--both in its physical and mental senses. The "distance" physically--the sites of the development towns and therefore the plants (locally or regionally) are determined by the government. "Population Dispersal Policies" are the main policies responsible for the decisions concerning location, though some other policies affect the location indirectly.

The distance in its physical sense is a significant factor in determining the economic success of the plant. As the plant is located in a more remote place, far from raw material and market centers, its probability to succeed diminishes. Government assistance to non-metropolitan industrial plants is based mainly on the assumption that the assistance has to compensate for locational disadvantages. The relationship has therefore the shape of "negative relationship."

The "distance" in its mental sense is felt as a result of isolation and seclusion which may stem from the physical distance, but also from a lack of adequate communication channels, low rate of public and private transportation, bad roads, etc.

The distance in its physical and mental sense has an impact on the community's well-being in a negative way.

b. "Socioeconomic differences"--between the community in the development town and the other communities in the country. The "social context of the country" creates therefore a mental distance which goes beyond the physical distance and its perception.

The "island phenomenon" has a strong impact on the community and especially on its labor force. For example, the differences between the socioeconomic structures of the community and the other communities, coupled with the exposure of the local workers to employment opportunities in the metropolitan areas, create employment expectations which can neither be fulfilled by the existing local industrial plants nor by the quality of the existing labor force.

The "island phenomenon" has an impact on the two types of behavior: on "migration" and on "job behavior." It might discourage emigration and encourage immigration, or may have an impact on the willingness to look for different jobs in more advanced plants. These responses are indicators for the desire to shorten the distances in all their three meanings.

2. "Behavior"--The behavior of the community and the labor force. The socioeconomic structure of the community, coupled with the "state" of the "island phenomenon," may induce two types of behavior, in order to

eliminate the feelings of seclusion and remoteness, those of being part of the "island phenomenon" and not belonging to the center in its physical, social, cultural, political and economic meanings. In the community it may induce emigration, moving from the development town to a community which is either closer to the metropolitan center (overcoming the physical distance) or has a better standard of living and is "closer" to the social, political and economic centers of the country. Among those who participate in the labor force, it may induce willingness to change jobs either in the community or outside it.

a. "Migration."--This variable is influenced mainly by the social and economic characteristics of the community, but has obviously an impact on these variables as well.

When the impact on migration is considered, it is important to distinguish between the effects of the "social structure" versus the effects of the "economic structure."

It is assumed that when the social well-being improves over time (higher level of education, more social services, etc.), the emigration decreases and the immigration increases. The same is assumed to be true for the economic well-being, when the standard of living rises--as a result of better employment opportunities, better wages, etc.--there will be less emigration and more immigration, but up to a point in which the better employment opportunities and the economic power of the

workers will outpace the parallel social welfare of the community. At this point, the resident of the community may feel that moving to another community which has a better social welfare may improve his standard of living, and since he can afford it economically, he may leave. This is the case described under "Issues and Conflicts" as: "The individual and the community in the industrialization process" (see chapter 6.1). Another cause for emigration might be when the technology in the plant is not suitable anymore to the labor force in the community. For example, a labor-intensive plant which is characterized by poor quality of working life (Q.W.L.) and which pays low salaries, may encourage emigration to a better community with better chances for employment, since the existing plants do not provide quality of working life and chances to advance in the future. The same may be true when the technology is too advanced for the capabilities of the local people. The plant will be physically located in the community, but many of the workers may commute from other communities characterized by higher standard of living. This is the case of "successful plant--green field industry" (see chapter 6.1).

It should be added that a worker may migrate to a different--"better"--community, without actually changing the nature of his job. He may decide to emigrate to a community with higher quality of life (education, welfare)

in order to improve his and his family's future perspective (if he can afford it economically), but still do the same type of job (or sometimes even less qualified one). For example, it is quite a well know phenomenon among immigrants from their own countries to other countries, who are willing to take jobs they would have refused to take in their own country, only for the sake of staying in a country which seems to promise a better future.

b. "Job behavior." Another type of behavior--which stems from the desire to eliminate the "island phenomenon" or at least to reduce the distance, when the economic conditions of the worker do not permit for emigration,--is changing the work place. This can take two forms: 1. If there are in the community plants which offer better Q.W.L. and chances to advance within the plant (existence of a ladder of occupations) these promised future perspectives help in eliminating the feelings of the "island phenomenon" and in some way reducing the mental distance. 2. If there are not in the community plants which offer better conditions, the employee may seek jobs in nearby communities and commute everyday to work. In the long run, it may lead to an emigration of the employee and his family from the community.

The two types of behavior have reciprocal relations with the community well-being and its labor-force mix. The effect of emigration, is a decrease in the size of the

community and hence deterioration of the community's well-being. The same is true for the labor-force mix. When employees leave, and usually, they are the better ones, there is a shortage of workers.

4. "Context"--"The Social Context of the Country"

The social context of the country describes the socioeconomic structure of the country, the various ethnic groups, the socioeconomic gaps, norms and cultural background. In the model, this variable has the role of a "reference group" rather than a central role which may be implied by the size of the "rest of the country."

This variable is used in order to understand the "island phenomenon" since the latter is a "relative concept," i.e., the feelings of isolation and the existence of the "mental distance" are the result--among other things--of the relative differences between the community and the rest of the country.

IV. SUITABILITY

"Suitability" is an outcome. It defines the extent to which the plant is suitable to the community. As such, it combines two factors which defines "suitability" (based on the definition of "suitability"--at the beginning of this chapter).

a. The suitability of the community--its location, infrastructure, services, and especially the labor-force mix

to the industry, in the sense that there are advantages for the industry to locate in the community so that it can exist and perform successfully.

The extent to which the local labor force fulfills the plant's specific needs (in terms of quality and quantity) for employees, expresses the degree of suitability of the community (the labor force) to the industry. If the labor force is suitable, it will contribute to the probability of the plant to be economically viable.

Following this line, it should be noted, that if the plant does not find the adequate labor force in the local community, it might hire the necessary employees from other communities in order to increase the probability to succeed. From the point of view of the plant, it has therefore the "suitable" labor force, but it creates, from the point of view of the community "unsuitability" since it does not exploit the local labor force. This will be expressed then, by the notion of "suitability" of the industry to the community (as it is described in the following paragraph b).

b. The "suitability" of the industry to the community, i.e., an industry which exploits, among other things, the relative advantage of the community's labor-force mix. This type of "suitability" means that the industry (or the mix of plants in the community) will use the various characteristics of the local labor force in terms of quality and quantity. It means also an industry which fulfills the communities' objectives in terms of economic and social progress.

The "suitability" has two outcomes. It is assumed that when and if the plant is suitable for the community, there are two consequences which have an effect back, on the community:

1. "Income level" (wages and salaries)--It is hypothesized that a plant which is economically successful, pays adequate salaries and wages, and therefore contribute to the income level of the community. In the model, it is suggested that if the plant is successful, its material rewards will affect the economic structure of the community.

2. "The quality of working life" (Q.W.L.)--This variable contains a wide range of variables which refer mainly to the relationship between the workers and their work environment. It includes a wide range of concerns, among them: human engineering factors, physical conditions, hygienic and aesthetical aspects, job safety, shifts, job enrichment, occupational mobility, etc. (For details, see chapter 6.1.) It excludes the wages and salaries which are mainly the outcome of the degree of the economic success.

There are mutual relationships between the "Q.W.L." and the "income level," although their nature is not clear. As the "Q.W.L." increases, workers work more efficiently and the probability of the plant to succeed and hence paying higher salaries increase. On the other hand, it can be assumed that the "economic performance of the plant" has a positive impact on the "Q.W.L." It means that as the

economic success increases, the "Q.W.L." improves. In cases in which there is not an actual improvement in the "Q.W.L." higher salaries and wages may compensate for the work conditions.

The nature of the mutual relationships should be explored. The "Q.W.L." has a significant impact on the well-being of the community, and hence on the labor force, its quality and quantity. For example, if the employment in the plant becomes attractive, there will be more people willing to work, especially among groups which tend to be less employed--the youth or the women (in case the specific type of jobs is suitable for them). The "Q.W.L." has therefore also an indirect effect on the well-being of the whole community.

Both, the "income level" and the "Q.W.L." have an impact on the "community behavior" and on the "suitability," and it is important to notice the different effects of both. If it is assumed that income level has an impact on the economic structure of the community, it means that when the plant becomes successful from an economic point of view, and hence the salaries and the wages may go up, above a specific level, if the social welfare of the community will not be simultaneously improved, some people may emigrate, since the individual economic standard of living will be higher than the social welfare of the community. The process may be stabilized in a lower level of the community's welfare (as a

result of emigration of the economically and socially strong members of the community). This will therefore have also an impact on the "outcomes," the "island phenomenon" and on "suitability."

On the other hand, if it is assumed the "Q.W.L." has an impact on the social structure of the community, it means that when the plant changes and advances technologically, it has a positive impact on the labor force and hence on the well-being of the community. If it is a stagnant, "old generation" type of plant, it may have a negative impact on the labor force, and hence on the community which may result in looking for different jobs in other communities (in case the standard of living in the current community is adequate for the worker and he prefers to stay) or in emigration altogether. This is another case of "unsuitability."

The relation between the social-welfare structure of the community and the economic structure and the economic strength of the individuals should be considered by the government when subsidizing plants and communities. For a given level of governmental subsidies, and dependent on the initial socioeconomic level of the population, subsidies to the plant should be given up to a point in which emigration is considered by the residents. Then, subsidies should be given to the community. To sum-up, a balance should be kept between subsidizing the industry and the community.

How the Model Is Used in the Suggested Study

The model gives a comprehensive picture of the factors taking part in the determination of the quality of the economic-industrial base of the development town. It is a static model which describes the situation in a specific period and gives indication to the rate of suitability between the community and the industry at that time. Nevertheless, when it used several times for various periods, it gives the description of the dynamic processes. For example, some variables, like the "island phenomenon" or the "community socioeconomic characterisics" indicate the result of a continuous development, and as such express outcomes of several years of development.

For the study purposes, the model will be applied to three periods: 1) the intitial stage of industrialization, 1955-1967; 2) the effects of the "Six Days War," 1967-1974; 3) the current period, 1974-1980.

By examining the situation continuously over the three indicated periods, the notion of "suitability" and hence its effects on the community, the labor-force mix and the industry, will get a dynamic meaning. It will help to understand and explain the history and the development of the "island phenomenon" and its crucial role in determining the strength of the economic-industrial base of the development towns.

CHAPTER VII

ANALYSIS AND GENERALIZATION OF THE CASE-STUDIES

In this study an attempt is made to understand the roots and the causes for the state of "crisis" in the development towns as revealed by the increasing rate of emigration and the aggravating employment situation.

A model is constructed to describe the development of the situation (chapter VI). The model depicts the interrelationships and interactions among the three major components participating in the situation: the community (in the development town), the industry and the government.

Since it is hypothesized that the current situation is an outcome of a dynamic process which has evolved over the years, the relevant period (1955-1980) is analyzed.

In order to examine the accuracy and the implications of the model, this chapter analyzes the data by correlating the key events in the preiod 1955-1980 with the model.

The correlation between the key events in the period and the model is done by dividing the whole period into three subperiods. The model is then applied three times, to each subperiod. The overall analysis of the three subperiods highlights the dynamic variables in the system.

The dynamic variables in the analysis of the situation were found to be of crucial importance in understanding the causes and the results of the situation. It was found that the dynamic effects on the community, on the industrial plants and on the interactions between them produce factors which are negative for the long run for the community and for the industry. These factors undermine mainly the "suitability" (in its two meanings--see chapter VI)--between the community and the industry--which is one of the necessary conditions for successful industrialization.

A second group of important variables are those which describe the multiple levels of distance, which affect the decision process and hence the behavior of the community and the industry. The multiple levels of distance (as described in chapter VI--"The suitability model") include: the physical distance, the accessible distance (roads, communication systems, etc.) and the mental distance which takes into consideration the cultural variables, socioeconomic differences and the subjective feelings of isolation and seclusion. The various "degrees" of distance have an effect on one hand, on the behavior of the community, and on the other hand, should be taken into account when different policies to remedy the situation are designed.

The analysis of the key events and the developments in the country, the communities and their industrial bases

show that the origin of the problems of "unsuitability" between the communities and their industrial bases are rooted in the initial stages of the country's development, in the policies and the developments that had been taking place in the period 1948-1967. The existence of the problem and the extent to which they were severe, have not been realized throughout the second period (1967-1974) due to an overall economic prosperity in the country, but they have continued to exist and developed. Only during the third period (1974-1980), when the economic resources have begun to be limited, the "unsuitability" and its implications became particularly evident.

This chapter is based on the following data:

a. Description of the chronological development of the communities in the development towns in general, and in Yerucham and Dimona in particular in the period 1955-1980 (for a detailed analysis, see chapter III).

b. The industrial trajectories--the history of the industrial plants in the communities (detailed analysis in chapter V).

c. The main economic and political events since the establishment of the state. Highlights of governmental policies: espoused policies and policies in use.

The three subperiods analyzed are:

1. 1955-1967: The initial stages of industrialization.
2. 1967-1974: The effects of the "Six Day War."
3. 1974-1980: The effects of the "Yom Kippur War" and the

Likud Government.

Before analyzing the data, a general background for the years 1948-1955--the period in which Yerucham and Dimona were established is given.

7.1. 1948-1955: The Initial Stages of Statehood

General Background. The striking phenomenon at this period, and especially between the years 1948-1951, were the massive waves of immigrants from Europe, Iraq, Yemen and Libya. Net immigration has reached 666,000, corresponding to an annual rate of an increase of the population of 24 percent. Three major decisions were taken by the newly formed Israeli government: 1) Dispersal of the population from the central parts of the country to the sparsely populated areas of the Gallil and the Negev. 2) Massive formation of capital to absorb the waves of immigrants. 3) Lessening the country's dependence on imports of essential foods, and producing domestically, at least 50 percent of all food requirements. Agriculture was developed to permit both the settlement of less populated areas and the saving of essential inputs. Another tool for investment policy was the granting of the status of "approved enterprise" under "the law for encouragement of capital investment" to industrial plants.

At this stage, agriculture was the main source of employment for the residents of the development towns. The

process of migration absorption was accompanied by high rates of unemployment--between 7 percent to 11 percent. Relief work programs were implemented, which have employed part of the unemployed.

At the beginning of this period, Yerucham was established (1951) and towards the end, Dimona (1955). By 1955, the number of residents in Yerucham was 500, and in Dimona it was 311.

The initial stages of social, political, economic and industrial developments, set the scene for future developments. A phenomenon--the "Island Phenomenon" which has been a crucial factor in further developments, has emerged at this stage. The location of the development towns in remote areas, coupled with the socioeconomic differences between the immigrants who have been sent to these places and those who have populated the metropolitan regions (see chapters I and 4.1), all have contributed initially to creating "nuclei" groups of population, different from other groups.

In the more specific case of Dimona and Yerucham, both have been established some 30-40 km. from Beer-Sheva, which itself was a new and undeveloped town, some 110 km. from the metropolital area. Dimona was better located (on the road from Beer-Sheva to the Dead Sea), but both were quite inaccessible due to the low rate of motorization, infrequent public transportation and lack of other communication means, like telephones.

Because of historical developments (see chapter I, "The history of population dispersal policy"), most of the immigrants in both towns have immigrated from Asian and African countries, in contrast to those who have immigrated from American and European countries and have settled in the central parts of the country. Since those who have immigrated from Asian-African countries are also characterized by big families, lower level of education and less skilled labor force, these have created, from the start, socioeconomic differences between the residents of the development towns and the residents of the metropolitan areas.

The situation in the area of employment has not contributed as well to bridge the gaps. Most of Yerucham's labor force was employed in relief work, although two big chemical plants had already been operating in the region since 1951. The two were: "Dead Sea Works" which was reopened in 1951, and "Negev Phosphates" which was established in 1952. In contrast to Yerucham, a great share of the settlers of Dimona have already been employed by the "Dead Sea Works" prior to their settling in Dimona (see chapter III). This gave Dimona a head-start regarding its socioeconomic viability, over Yerucham.

Based on the model, and on the historical development, it can be seen that the dispersal policies were concentrated mainly in welfare-social policies and in

infrastructure. Industrialization was in an inceptive stage. There were not any local plants, and the issue of "suitability" between the community and the industry did not exist. Nevertheless, the basis for the "island phenomenon" has been created at this period, basically by the pattern of population dispersal policies.

7.2. 1955-1967: The Initial Stage of Industrialization

From the perspective of the development towns, this period can be divided into two subperiods:

1955-1960: The years of urbanization of the development towns.

1961-1965: The years of industrialization of the development towns.

The last two years in this subperiod, 1965-1967, were years of recession and beginning of a period in which the dispersal of the population froze.

Government policies. This period, which is known also as the "Sapir Era" (after the late Minister of the Treasury), was charactrized by vigorous policies to further develop the existing settlements. The investments in the various branches of the economy have been accelerated and grew by 50 percent compared to the first half of the 1950s. The reparation agreement with Germany enabled development of new industrial branches and investment in transportation and electrical infrastructure by import of machines and capital. Most of the roads were paved in the development areas, some

30 percent of the roads were paved in the southern part and some 20 percent in the north. The objective of this program was to provide a network of roads between the development towns and the national network of roads (Zilberberg, 1973).

Investments in agriculture decreased (from 30 percent at the beginning of the decade to 26 percent). Heavy subsidies and loans were part of the accelerated government directed industrialization policies. In 1959, a geographical criteria was applied to "the law for encouragement of capital investment in industry," and development areas were preferred in terms of getting a larger share of the investments in loans. Nevertheless, in practice most of the investments were done in the central part of the country(some 70 percent of the industrial built area).

In the second subperiod (1961-1965), the economic tide has continued, and the rate of growth of the Israeli economy has accelerated. This high rate stems mainly from growth in the industry (annual rate of 14 percent). Industrialization policies were accompanied by dispersal policies. Some 45 percent of the investments were made in development areas; 25 percent in the southern parts and 17 percent in the north, the percentages were similar to the share of each region in population growth. This was a considerable change in the geographical distribution of investments in industry. Compared to the previous period,

the southern region enjoyed a greater share of the investments. But, it should be noted that except for the development of raw material and chemical plants in the south, which demanded a great share of investment in capital, the other industrial plants (the local ones--those which planned to serve the near locality) got less capital investments relative to the share of the population they had to employ. Nevertheless, this was the period in which the industrial infrastructure was established for future needs.

As the model shows, at that period (1955-1967) and especially between the years 1958-1964, the government has implemented extensive dispersal policies, particularly through industrialization. Among the various development regions, the southern region has clearly gotten preferential treatment compared to other development regions.

The share of the development areas in the industrialization process was relatively small at the beginning (1955-1960), but it has increased in the following period.

The industry. The government's extensive policies to industrialize the development areas has begun showing results around 1957-1958 when two textile plants were established in Dimona: "Kitan Dimona (established in 1958) and "Sivi Dimona" (established in 1959). At this stage, as the model indicates, government dispersal policies had an impact on the industrial sector. The positive impact was on

both the public sector (effects on the "economic performance of the plant in the community," as defined by the model), and the private sector--a positive impact on the decisions of the industrialists to locate in the development areas. The economic incentives coupled with some ideological considerations helped in attracting new plants to the region. Over the decade (1955-1965) some thirty-five new plants (including the two big textile plants in Dimona and a cosmetic laboratory "Lon" in Yerucham) were established (see tables 3.6-3.7 in chapter III). New investments and expansions were done in the "Dead Sea Works" and in "Negev Phosphates."

The community. On the community side, these were the years in which welfare and social policies have helped in the absorption process. Nevertheless, as welfare indicators show the initial socioeconomic differences between the central parts of the country and the development areas has not been narrowed down. In 1961, the average size of a household in Dimona was 4.6 persons per household, in Yerucham, it was 4.8, while the average for the whole country was. 3.8. The population in the development towns continued to be characterized by big families, high natural growth and by lower education level, compared to the national average. In addition, programs to improve the standard of living in the development areas were lagging behind similar programs in the central parts of the country.

For example, between the years 1961-1966, 25 percent of the additional population was sent to the south, but only 16 percent of the additional housing units (and only 13 percent of the built area) were built in the south. Although, there was an increase of 30 percent in the size of an average apartment (compared to the previous period 1955-1967), there was still a gap between an average size of an apartment in the south (60 square meters) and in the central parts of the country (82 square meters).

It is believed that other welfare and educational programs have suffered from deficiencies stemming mainly from the remoteness of the development towns. For example, shortage of social and community workers, less competent teaching staff, less resources directed to various programs, etc. The physical and social distance from political and decision-making centers are blamed for the less equal resource-allocation relative to the metropolitan centers, or to settlements, politically closer to the decision-making centers (like the Kibbutzim). All of these have contributed to the process of broadening the socioeconomic gap.

For this matter, a distinction should be made between Yerucham and Dimona. While Yerucham lacked strong local political leadership, Dimona had a leadership which grew up in the "Dead Sea Works" and was cultivated by the plant's management. This leadership has helped in getting more resources to the town.

The employment situation was good, relative to the rest of the country. The high rate of employment was due to the economic tide. Unlike several development towns like Beit-Sheaan and Kiryat Gat of which their employment relied on agriculture in the rural surroundings, in Dimona and to a lesser extent in Yerucham (which still had a high share of employed by relief works), employement was based on industry. In 1961, while the share of the employed in industry in the whole country was 25.4 percent, the share in Yerucham was 25.7 percent and in Dimona it was almost double--48 percent. This was due to the employment of a great share of Dimona's labor force in the chemical plants and in the two new textile plants.

The "labor-force mix" as part of the community--as the model indicates--consisted mainly of male, heads of families who were employed in the raw material plants and in the textile plants. The last ones were planned mainly to employ females who were unemployed at that time.

Unemployment rate has decreased from 7.5 percent at the beginning of the period to 4.5 percent at the end. While in the period 1955-1960 most of the unemployed were concentrated in the central parts of the country, in the period 1960-1965 there were some unemployment nuclei in the north and to a lesser extent in the south. Some relief work programs were implemented.

The improved economic situation, coupled with positive effects of the various government policies--i.e., "infrastructure policies," "welfare-social policies," and "employment policies"--all had effects on the well-being of the community (which can be expressed by changes in the "community's socioeconomic characteristics") and especially on the community's behavior.

The nature of the "island phenomenon" as defined in the model has not changed much. It should be noted that since the whole country was in a process of absorbing the immigration from abroad, the differences in the standard of living between the development towns and the rest of the country were smaller than in later years. The "island phenomenon" had more physical meaning rather than a mental one, since the towns were located in remote areas and the various ways to reduce distance and to increase accessibility were lacking, i.e., low motorization rate, infrequent public transportation, shortage in telephones, etc. Moreover, the lack of exposure to the life in the central parts of the country because of the distance and the absence of radio, television, etc., helped in preventing strong feelings of isolation and seclusion among the residents of the development towns. As a result, expectations--which play a crucial role in satisfaction from work and quality of life--were relatively low.

From the community behavior, and especially from the low emigration rate (since there was not a variety of industrial plants, "job behavior," i.e., changing jobs, was not very common), one may conclude that the residents of the communities were quite satisfied with employment and quality of life. Nevertheless, it is known that some strong (socially and economically) segments of the communities have emigrated at that stage. Those who were employed in the big regional plants have moved to Beer-Sheva or Arad and retained their jobs. Those who were not satisfied with the jobs in the textile plants have preferred to move to the central parts of the country. Many have ended up working in similar plants and being employed in similar jobs in the metropolitan areas, but at least, from their point of view, they had the feeling that they improved their's and their children's future life, by living closer to the center of the country.

Nevertheless, as a result of the governmental policies, Yerucham and Dimona have experienced population growth. In both towns there was emigration, mainly to the central parts of the country, but the constant immigration of newcomers sustained, on the average, quite a high rate of growth. (See tables 3.1-3.2 in chapter III.) This was also due to the population dispersal policies at that time which has given priority to the south over other regions. Two-thirds of the additional population was sent to the south.

Suitability. The socioeconomic characteristics of the community in both towns, and hence the qualities of the labor-force mix were suitable to the labor force needed by the regional as well as the local plants. The low skilled labor force was suitable for the types of jobs available in the plants even though there was a shortage in skilled and professional workers. This problem was solved by commuting. Professional and high-skilled workers have commuted from Beer-Sheva and Arad (after 1963), and some--especially in managerial jobs--have commuted from Tel-Aviv.

The second type of "suitability"--this of the plant to the community--existed as well at this time. The existing plants as a source for employment were suitable to the community, and the residents, some of whom have been employed for many years in relief work, were satisfied with the permanent industrial jobs.

As the model suggests, when the plant is suitable it has positive impacts on the community by affecting the income level and through the quality of working life (Q.W.L.) in the plant which may, among other things, improve the educational and occupational level of the labor force.

The effect on the income level was immediate, the salaries of those who were employed in the plants were higher than the payments of the relief work. The effects of the "Q.W.L." on the work at the plant and on the employees were felt in later years (will be discussed later).

Towards the end of the period, and between the years 1966-1972, there was a freezing in the population dispersal. The main reasons were: a. The years 1966-1967 were years of recession, there was a sharp decrease in the economic activities and high unemployment. The immigration to the country almost stopped, so that the main tool for dispersing the population was absent. Investments in industry and housing went down, and the first to suffer were the development areas which have been heavily dependent on governmental support. b. "Population dispersal" as a national goal has lost its high priority among other new national goals (this issue will be discussed later).

Inspite of the recession, two new plants were established in Yerucham. "Tempo," a glass manufacturing owned by a private entrepreneur was established in 1966. "Foenicia," owned by the conglomerate "Koor," which belongs to the Labor-Union, manufacturing hollow glass as well, was established in 1967. The first plant employed 300 workers while the second only 50. Both were almost the sole places of work for Yerucham residents. Only part of the unemployed could find jobs in these plants, since not all of the relief-work employees were suitable for industrial jobs.

The negative impact of the recession was the closing down of several, recently established small plants and workshops. In Dimona, six plants closed down and in Yerucham, three. In exsiting plants, workers were fired.

The textile plants in Dimona, as well as the regional chemical plants, which were heavily supported by the government, have survived the recession. As a result, the unemployment rate in Dimona and Yerucham did not go up significantly unlike the rest of the country. Some other factors which have probably contributed to the low unemployment rate were: lower level of education which increases the willingness to participate in relief-work programs, and the already higher percentage (relative to other communities) of participants in relief-work programs (Don and Bar-El, 1972).

7.3. 1968-1974: The Effects of the "Six Day War"

General Background. The period 1968-1974, had a crucial impact on the industrialization process in the development towns in general, and in Dimona and Yerucham, in particular. Inspite of the recession towards the end of the previous period (1965-1967), the outcome of the vigorous industrialization policies implemented between the years 1960-1965, came into effect at this period. The accelerated rate of economic development, which has characterized the period after the "Six Day War" and on, has undoubtedly contributed to the process. The net domestic product grew at an annual average rate of 10 percent, and the rate was especially high in the construction and industiral branches. This growth was partially due to the external factors, i.e.,

the military situation and the investments made for military purposes, the increase in capital import and the renewal of immigration from abroad. Essentially, it was the continutation of the growth process which has started in the 1960s.

The annual growth rate of investments (in real terms) between the years 1966-1972 was larger by 38 percent compared to the annual volume in the previous period.

Government policies. The most distinct feature of government policies at this stage is the beginning of a tendency to rely more on the private sector. In the area of housing construction, part of the demand for housing--for newcomers, young couples and others--was transferred from the public sector to the private construction companies. By doing so, the government has decreased its control on one of its most important tools to disperse construction and population to development areas. Since most of the private construction was done in the central parts of the country, the overall effect was a decrease in the share of the south--in terms of quantity of apartments--from 16 percent to 12 percent and in terms of apartment size, from 13 percent to 10 percent. The decrease in the share of the development areas in the country's development, could be seen also in the pattern of population dispersal. Over this period, there was not any change in the dispersion. As in the case of construction, the south experienced a decrease

in its share in additional population compared to the increase in the previous period. The share of the Jerusalem region in construction and addition of population has increased. The share of the northern part in construction has not changed but in absorbing new immigrants it has decreased.

Investments in other branches of the economy over all the country have increased as well. The annual rate of investments for the whole period (including the recession one) has increased by 40 percent compared to the annual rate in the previous period.

The geographical distribution of investments in industry shows that the shares of the southern region and the northern region have decreased. While formally, the government efforts to industrialize the development towns have continued, since the beginning of the 1960s, the overall effects of the intensified economic activities in the central parts of the country have caused the decrease in the share of the development towns, relative to their share in the previous period.

The distribution of loans for industrial purposes by regions, shows that in the period 1965-1972, the share of the development regions has increased, but the increase was mainly in Jerusalem, while the shares of the south and north regions have not changed. The overall trend in this period was a decrease in the share of the south and the north

regions. Moreover, there was an increase in the amount of loans and subsidies given to industrial plants in the central parts of the country due to their ability to export or to substitute import. Exporting plants were entitled to become "approved enterprises" and defence-related plants were entitled to become "recognized plants" (plants which produce import substitutes for military purposes) even though they were located in the central part of the country. Inspite of the fact that the amount of loans and subsidies was smaller than in the development regions, it was found out that plants preferred to locate in the central parts. Moreover, consistent with the government trend to encourage export, the last two years were characterized by increasingly strict demand--from plants in the developing regions--to export some percentage of their 'product.[1] These changes in the policy were disadvantageous for the developing areas from the point of view of their relative share in industrial investments although the total investment continued to be large.

In sum, it can be said that from the second half of 1967 and on-- after the "Six Day War"--the economy has started taking off again. The rate of development has accelerated, investments increased, and there was full

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[1]The original law (passed in 1962) made the "approved enterprise" status available only to plants which export some percentage of their production. (The amount varied according to location), but this condition was not enforced until 1968.

employment coupled with a new wave of immigration, but at that stage, when resources for population dispersal were available, the priority--given to the objective of population dispersion since 1948 and even earlier--was not observed, and other national objectives got higher priority. This was due to several causes: a) new pressing needs such as improving the balance of payments and increasing export, b) geopolitical changes and especially the high priority given to the objective of settling the West Bank and Jerusalem, c) changes in the nature of immigration (immigrants who came from developed countries, with higher socioeconomic characteristics) which could not be used any more as a tool for population dispersal. (This issue will be discussed later.)

The industry. The extensive industrialization policies implemented in the previous period (1960-1965) had an effect on the industrial structure of Yerucham and Dimona in the years which followed. Although the espoused policy has not changed, government policies in use reflected the change in the order of priorities among national objectives. As the model suggests these policies had an effect on the industrialist's decision process. Industrialists preferred to locate their plants in the central parts of the country, and to benefit from the better location and some of the government subsidies rather than to locate in the development areas. Only a few have decided to establish

their plants in Yerucham and Dimona. The entrepreneurs claim that the decision to locate in the development towns were done under ideological (the importance attributed to pioneering) or personal (their close relationship with the late Minister of the Treasury, Sapir) pressures, rathr than strict economic considerations. Relative advantages of the location like the availability of raw material were marginal to the decision. Moreover, the locational disadvantages--which stem mainly from the physical distance (as the model suggests, as distance grows the probability of the plant to succeed decreases)--outnumbered the possible advantages. Among the new plants were: "Sodom Metal"--a big metal workshop, serving mainly the chemical plants, and "Negev Ceramics"--ceramics tiles manufacturer, which had to close half of its production line, close to its establishment, because of a wrong selection of a product. Among the existing plants there was a high turnover of privately owned, small plants and workshops, belonging to the light industry branches like: sewing workshops, mechanical locksmith's workshop, carpentry shop, etc. These plants could be defined as plants which "maximize subsidies" (Finger, 1971), rather than maximizing profit or any other objective which can be an indicator for economic success. These kinds of plants try to achieve immediate profits using the available subsidies and loans designated for "approved enterprise." After a few years (sometimes as few as one to

two years) of exploiting the available funds, the plants closed down. The main reasons for closing down the plants can be categorized under "employer's policy" which stems from the industrialist's decision process. The "economic performance of the plant" was affected by a) wrong selection of the product, because a proper market research was not done; b) incompetent management--finding a good manager was one of the big problems faced by the plants. At that time a manager among the local people could not be found, and those who were willing to commute to the development towns, from Beer-Sheva and as far as from Tel-Aviv, were usually unexperienced managers who looked at the work in the remote place as a "spring board" for a better job in the metropolitan area. c) The technology--the technology selected was either inadequate from the start, or became obsolete quite soon. The final product had a low quality. The entrepreneurs, who had quite low expectations from the plants (either because they were pressed to establish the plant, or simply wanted only to use the available governmental subsidies) did not want or did not have resures to invest in upgrading the technology. d) The labor-force mix--as the model suggests, the quality and quantity of the labor force has an impact on the "economic performance of the plant." At that period, the labor force available was suitable to the plant's needs, except for the professional and skilled labor force which had to be brought from neighboring towns.

With these kinds of problems, the plants could not compete with other plants in the local and especially the export markets--as the new circumstances have demanded--and had to close down.

In contrast to the small plants and workshops which had to close down, the big plants (textile and glass) which faced a similar problem, did not close down. These plants operated with obsolete technologies, and hardly exported, but they employed a great share of the labor force in the towns, and as such got a strong financial support from the government to ensure their existence and to prevent massive unemployment. (This issue will be elaborated on later.)

The regional chemical plants have enjoyed a stage of expansion and growth. A new chemical regional plant was established--"Periklas" (1973).

The plants, and especially the new, more advanced ones, found some difficulty in finding the needed labor force for their jobs. Many of the managers, engineers, technicians and other professionals commuted from other towns in the region and especially from Arad and Beer-Sheva.

The community. The accelerated economic development and the prosperity which characterized the period, had an effect also on the socioeconomic situation in the development towns. The standard of living increased, and the socioeconomic situation of the residents of the towns has been improved. Several welfare indicators suggest that

the socioeconomic characteristics of the communities have changed.

a. In the area of housing, there was an increase of 20 percent in the size of an average apartment in the country. The trend which has started in the previous period of narrowing the gap between the regions, has continued. The size of an average apartment in the south was 78 square meters (80 percent of the size of an average apartment in Tel-Aviv and the central parts of the country) compared to 60 square meters previously (73 percent of the size of an average apartment in the center). Part of the gap was due to the relatively limited involvement of the private sector in construction in the development towns, and the smaller apartments (by 10 percent) built in the south by the public sector, inspite of the average size of a family in the south which continued to be bigger compared to the size of a family in the metropolitan areas.

In the specific case of Yerucham and Dimona, the average size of a family, in 1972 was 5.1 in Yerucham and 4.5 in Dimona, while the national average was 3.6. As a result the housing density was as follows: In Yerucham, only half of the population lived in decent housing conditions (1.5 persons per room). In Dimona, 56.4 percent lived in decent housing conditions, while the national average was around 70 percent. (For comparison, in Arad, almost 90 percent of the population have lived in decent

housing conditions in 1972). Compared to the year 1961,[2] the situation in Yerucham and especially in Dimona has improved, but it has improved to a larger extent in the metropolitan areas. Consequently, the welfare gap between the development towns and the metropolitan areas has broadened.

b. Another indication for the relaltively lower level of welfare is the "dependency ratio"[3] which continued to be high in both towns. In Yerucham, it was 1.31 and in Dimona 1.14, while the national average was 0.92.

c. The rate of motorization is another appropriate indicator for comparing the welfare situation in the towns to the whole country. In 1973, the rate of motor vehicles per 1000 was 18.3 in Yerucham, 22.8 in Dimona and 88.0 in the whole country.

d. Education level in Yerucham and Dimona was lower compared to the rest of the country. Some 21 percent of the population of Dimona and 33 percent of Yerucham's population had minimal education (0-4 years of schooling), while the national average was 13.6. Only 3.6 percent in Yerucham and 9.2 percent in Dimona had high education compared to the national average of 14.5 percent.

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[2]The housing density in 1961 was: 1.8 persons per room in Dimona, 2.03 persons in Yerucham, and the national average was 1.4 persons per room.

[3]"Dependency ratio" is the number of children in the ages 0-19, plus the number of adults in the ages 65+, divided by the number of people in the working age 20-64.

The same socioeconomic features have characterized the labor-force mix which is a segment of the population, and had an effect on the "economic performance of the plant."

The labor force at that period consisted mainly of males, heads of families who were initially employed in the chemical plants, and later in the newly established local ones. The females were not active seekers of jobs, and the tendency to go to work was not strong because of the big families they had and traditional constraints, but the supply of jobs--when the textile and glass plants were established--has created demand, and when suitable jobs were available for females, the needed labor force was found.

As the welfare situation was improved, the employment was improved as well. Except for the high rate of unemployment at the recession period (and as was mentioned before, the development areas suffered relatively less than the central regions), the rate of employment was high from 1968 and on, and the peak was in the years 1972-74.

In the structure of employment there was a decrease in the share of employment in agriculture and an increase in the share of employment in industry. Dimona and Yerucham were heavily based on industry; 65.3 percent of the employed in Dimona had jobs in industry, 42.8 in Yerucham while the national average was 26 percent. It is therefore clear,

that the extensive industrialization in the 1960s which was implemented by capital investments had an effect also on the employment. Nevertheless, the growth in employment was somewhat restricted due to the tendency to establish capital intensive plants which stems from the way the subsidies were given--mainly to capital and less to employment.

The quality of the labor force has improved due to vocational-education programs available, but mainly due to the on-the-job training. Work at the plant itself was for many employees their first acquaintance with work life, work ethics, keeping schedules, etc. It is important while discussing employment to distinguish between the chemical plants, and especially the "Dead Sea Works" and the local plants. Because of their characteristics[4] (capital intensive, existing of job ladder, challenging jobs, etc.) coupled with the national importance attributed to the plants ("national project"), a special climate has been created in the plant, which enabled and encouraged occupational mobility on one hand and workers leadership on the other hand. This leadership, in the case of the "Dead Sea Works" was transferred later to the town Dimona and had an impact on the community life. The local plants (textile and glass) lacked these characteristics, and their impact on the community was mainly through income, by increasing the economic power of the community and hence the standard of

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[4]For more details, see chapter V.

living in the town. (See under "Suitability.")

The social performance of the community. The "island phenomenon": Inspite of the improvement in the socioeconomic condition in both towns--and to a greater extent in Dimona--the gap between the welfare condition in Yerucham and Dimona, and the metropolitan area remained broad. In some areas, it narrowed down, especially in housing. But due to the rapid progress in the central parts of the country, the socioeconomic gap broadened.

On the "distance" part of the phenomenon, there is no doubt, that the physical distance has been "decreased" by increasing various levels of "accessibility." The rate of private transportation has increased, and public transportation has been upgraded. The number of households with a telephone has increased.

The decrease in the physical and accessible distances has exposed the population in the development towns to the way of life in the metropolitan areas. This exposure was strengthened by the introduction of a national television system to the country, after the "Six Day War."

All of these, coupled with the real socioeconomic gap, have emphasized the dissimilarities between the development towns and the metropolitan. Moreover, the mental distance, the feelings of "isolation" and "seclusion" have been strengthened. The main causes were: a) The increased attention given to the new territories (Sinai, the

West Bank and the Gaza Strip) in terms of material and human resources which replaced the attention given to the development towns in the previous period. b) Changes in the policy to settle new immigrants. Due to changes in the socioeconomic characteristics of the immigrants (mainly from Europe and America), who were sent to the central parts of the country, rather than to development areas as in previous periods. The residents of the development towns felt that they were discriminated against when they were settled by the various public bodies.

As the model suggests both the socioeconomic differences and the various levels of distance create the "island phenomenon." Based on the evidence brought, it can be said that the "island phenomenon" has been reinforced. There was a difference in the extent to which the phenomenon existed in Dimona and Yerucham. Dimona has enjoyed several advantages which in some sense "shortened" for its residents the "distance." The first advantage was the concentration of extended families ("Hamulot") from similar origins, i.e., North African countries (the majority came from Morocco). This gave people feelings of "belongingness." Moreover, the existence of a network of informal institutions taking care of various economic and welfare aspects, partially compensated for the alienation and detachment feelings towards the center. In Yerucham, wherein people from

various origins were put together,[5] these kinds of informal networks have not been developed in the town. The feelings of isolation and alienation were therefore stronger in Yerucham.

The second advantage of Dimona was its strong leadership, which has been developed and cultivated in the "Dead Sea Works" and was transferred to the town. The mayor of Dimona, which is a "Dead Sea Works" employee on leave, is also a Parliament member, and there is another Parliament member from the town. Yerucham, on the contrary has suffered from frequent changes of its local leadership, and at the time of the study, the municipality had an outside council. The strong dependency on outside institutions has reinforced the "island phenomenon" in Yerucham.

The third and the most obvious advantage Dimona has is the better location of the town, compared to this of Yerucham. Except for the proximity of Dimona to Beer-Sheva, Dimona is located on the main road from Beer-Sheva to Sodom and the "Dead Sea Works," while Yerucham is located on a by-road, some 10 km. from Dimona and the main road.

Suitability. As the model points, there are two kinds of "suitability." The "suitability of the community to the plants," and the "suitability of the plants to the

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[5]This was part of the ideology of "Mizug Galuyoth" ("Melting Pot"). Due to the failure of this policy, later on, immigrants were settled by groups according to their country of origin (see chapter I).

community." At that period (1967-1974) the existing labor force was still suitable for the needs of the industries. The main problem, faced by the local plants was the lack of technicians, skilled workers and managers. This skilled labor force, was found in the neighboring communities--Arad, Beer-Sheva--and some commuted even from Tel-Aviv (especially managers). It was disadvantageous for the plant that the manager lived out of the towns, on the other hand, inspite of some efforts made by the communities (especially by providing housing), the places were not attractive enough for the managers' families.

The new plants that were established in that period, took as a "given" the quality of the existing labor force. The types of plants that were attracted to these places needed therefore low skilled labor force which was in abundance in the towns. From the beginning the plants planned to hire the skilled and professional employees from other communities in the region, sometimes without even checking if the necessary labor force can be found locally.

The regional chemical plants, which were not committed in any way to hire workers from a specific locality, usually hired the "cream" of the labor force from the whole region. The employees commuted every day using the transportation system provided by the plants.

In addition to the free transportation, the employees were paid for half of the time spent commuting.

In sum, it can be said that at that stage the community (its labor force) was suitable for the plants and has contributed--to various degrees--to the successful performance of the plants. Those plants which had to close down did so because of reasons other than the quality and quantity of the labor force. The main reasons were: wrong selection of product, management that "maximized" subsidies, and the growing competition in the export markets (espeiclaly in the area of textile) to which they were exposed due to changes in the governmental policies.

To what extent were the existing plants suitable to the community and what was their contribution?

The very low unemployment rate at that period, and especially between the years 1972-1974, may indicate a high degree of suitability, but it apparently masked a beginning of a process in which suitability began to deteriorate. A slight increase in the negative migration balance is an indicator for the initial stages of the situation of "unsuitability."

It was argued already that work in an industrial plant (compared to relief work) introduced to the labor force the concepts of work ethics, discipline and skills, but when the years passed, and the technology has not been modified, and actually became obsolete, it did not contribute anymore to the technological advancement of its workers, in addition it caused inefficient production and

losses. The work began to be monotonous and boring. Rough competition with development countries, which have an abundance of cheap labor force, forced the industry--especially the textile branch--to pay low salary in order to be able to compete. The plants became less attractive. Skilled and successful workers found out that they cannot advance in the plant and preferred to move to another plant or to leave the community altogether since there were not many employment alternatives. The less capable have stayed in the plant.

The regional chemical plants continued to be suitable since they kept offering challenges to their employees, advancement in the job ladder and good salaries.

An analysis of the "labor-force mix" by segments shows that the existing industrial structure was partially suitable. The males, heads of families could find jobs in the regional plants, and some--those who did not want or could not work in harsh physical conditions--could find some jobs in the plants, located close to the towns. But the number of available jobs were limited, and paid low salaries. Females found jobs mainly in the textile plants. At that stage, there was not yet an employment problem for young unmarried women, they did not tend to seek work before getting married. The main difficulty was faced by ex-soldiers, who came back to town after their service in the army with some technological skills acquired either in

vocational education school before going into military service, or during their service. Without much choice they took jobs in the existing textile and glass plants, only few found suitable jobs in the regional plants, since the number of vacant jobs was limited.

The salaries and wages paid by the local plants were not high, and in the textile plants and various sewing workshops they were quite low, but compared to the relief-work payments, they were high. The salaries paid by the chemical plants were one of the highest in the country.

(The effects of the Q.W.L. in the plants, and especially in the chemical plants on the social and educational level of the employees was discussed under "Suitability.")

Community Behavior. The model suggests that the community behavior is the result of four factors: The community socioeconomic characteristics, the labor-force mix, the "island phenomenon" and expectations which also affect all the other three. The analysis of the period 1967-1974 shows that migration and job behavior was actually the result of these factors, coupled with indirect effects of government policies and the degree of "suitability."

The data shows that within the period 1967-1974 inspite of the improvement in the socioeconomic characteristics of the community and the low rate of unemployment, there was the beginning of a negative

migration. In 1973, the rate of negative migration was -22.4 per 1000 in Yerucham and -37.0 per 1000 in Dimona.

It is suggested that this was a reaction to several processes that have been taking place: a) The changes in national priorities and the lesser importance attributed to population dispersal. Population dispersal froze in that period. b) The improvement in the socioeconomic characteristics of the communities coupled with stronger "island phenomenon" feelings. c) The deterioration of the "suitability" between the industry and the communities.

There were two types of reaction to the situation in order to eliminate the "island phenomenon" and to decrease the mental distance. One was to immigrate to the central parts of the country. Although not many have changed the type of job done in the new place, the changing of the residence, and the living in the metropolitan area itself reduced to some extent the "isolation" feelings. Data on the direction of emigration from Dimona and Yerucham is not available, but the concentration of many of the ex-development towns' residents in the slums and the low-level housing projects in the big cities may indicate that this has been the process. (The issue of to what extent the people actually improved their situation will be discussed in chapter VIII.)

A second type of reaction was of those who have succeeded in their jobs, became economically stronger and

preferred to move to better communities. They usually followed two patterns of behavior:

a. If the employees wanted to retain their jobs in the plant--this was especially true for the workers of the chemical plants--they moved to better communities like Beer-Sheva and Arad. The developed transportation system provided by the regional plants encouraged this move. Moreover, in some cases it was more convenient to live in these communities since there was a direct transportation from these communities to the regional plants. In the case of Yerucham for example, there was not a direct transportation arrangement. The result was that none of the town's residents worked in the "Dead Sea Works." Historical data on the spatial distribution of the "Dead Sea Works" employees and the year in which they have begun to work in the plant, indicate that over the years, as the workers climbed up the job ladder, they moved from Dimona and Yerucham to Beer-Sheva and Arad.

b. Employees that did not want to retain their jobs, moved from the community and the region altogether, in most cases to the central parts of the country, where they could find jobs more suitable to their capabilities.

7.4. 1974-1980: The Effects of the "Yom-Kippur War" and the Likud Government

The phenomena and the processes that had started in the previous period, have been strengthened and reinforced in the period 1975-1980.

The worldwide recession coupled with the adverse effects of the 1973 war made the years 1974-1976 difficult for the Israeli economy. After growing by some 5 percent in 1974, the GNP increased by some 1 percent in both 1975 and 1976, which is in stark contrast to the pre-1973 growth rates.

Investment fell and stagnant production was accompanied by rapid inflation as the consumer price index rose by 46 percent in 1974 and 24 percent in 1975, both of which combined to increase labor unrest. A serious economic problem facing Israel has been a large and persistent deficit in the current account of the balance of payments. The deficit swelled appreciably in 1973 and 1974 as a result of the Yom Kippur War and the increase in fuel prices in the world's markets.

The only relieving feature in the period was that unemployment remained low in 1975, totaling 3 percent of the labor force at the end of the year, but the unemployment rate began to rise in 1976.

Government Policies. A quickening in the movement away from governmental-interventionist policies, followed the 1977 election defeat of the Labor coalition which had governed Israel since the founding of the state. The new government coalition favored a more laissez-faire economic policy. The first important step in this direction was the October 1977 policy package, which included the adoption of

a floating exchange rate and the removal of many distortions in the domestic price system. These were significant actions, although they represented an acceleration of previous trends rather than a fundamental change of policy. The Israeli government policy moved towards integration into the world economy, and an active promotion of exports has been carried on since the late 1960s and has continued in the 1970s.

The serious economic problem facing Israel has been the large deficit. The basic cause for the large deficits was the need to import machinery and goods to increase the pace of industrialization and raise the standard of living, coupled with a lack of competitive exportable products. While the large deficits were undesirable in themselves, it is clear that they permitted the Israeli economy to enjoy high rates of growth.

The government has tried to reduce the balance of payments deficit through different policies. Starting in 1975, there was a series of "creeping devaluations" of the Israeli currency. As was mentioned before, these devaluations ended in October 1977, when the Israeli pound was allowed to float. This policy made imports more expensive, but also made Israeli exports more competitive on the world markets. Second, the government tried to reduce the growth rate of the demand for imports by curbing the expansion of the Israeli economy. Third, the government

adopted various policies to directly and indirectly encourage exports.

These policies have been successful in reducing the deficit: by 1977 the ratio of total exports to imports rose to 0.66, its highest level since 1966. However, the price that had to be paid for this improvement was a slowdown in the growth rate accompanied by a high inflation rate.

The government has used three policy instruments to influence the nature and level of economic activity: 1) The Development Budget--which was used to channel government funds to the private sector, and to finance the creation of social overhead capital. A large percentage of the Development Budget has historically been devoted to residential construction, and has remained important in the years 1975-1980. In the 1977-1978 budget, of the amount allocated for development capital, 24 percent has been earmarked for industry and crafts, 17 percent for agriculture, 12 percent for oil pipelines and drilling, with the rest distributed among water projects, transport and communications, tourism, etc.

2) The Law for the Encouragement of Investment--which has been implemented with amendments since the 1950s. The law was designed to stimulate direct foreign investment to development areas. The law encouraged investment by providing direct grants, subsidized loans and reducing taxes and duties, according to the location of the

plant and the percentage of the production which was exported. These incentives were available at the investment stage and were not linked to future performance.

In the period 1974-1980, due to the high rate of inflation and budgetary constraints, the terms on which the loans were given under the law were changed. An amendment to the "Law for the Encouragement of Capital Investment," passed in August 1978, brought the rate of interest on development loans into comensurability with the rate of inflation. However, an element of implicit but smaller subsidy remained. The lengthening of the repayment period from five to ten or twelve years counteracts to some degree the effect of the increase in interest rates. Another change was that plants that intended to export a high percentage of their production were guaranteed similar loan terms as plants in the development areas.

The tax concession included: tax relief, lower tax rates, accelerated rate of depreciation, tax credits and deferral of payments. The Treasury estimated that out of the total incentives given to industrial plants in development zones, more than half came through tax concessions. But it has been pointed out that the law did not take into account the fact that the generous support for investment in capital goods under the existing law had resulted in much superfluous investment and underutilization of the equipment bought and structures erected in the development areas.

3) Tariffs and quotas have been used to protect domestic agriculture and industry from foreign competition. At the same time, till the introduction of the New Economic Policy in 1977, exports were encouraged by a variety of subsidies. Under the New Economic Policy, the Israel currency was devalued by 40 percent, and allowed to float. This action put all the export industries on an equal footing, in effect it benefited the technology intensive industries in which the country probably had a competitive advantage.

The overall impact of the New Economic Policy on the industrializatiion of the development areas was quite negative. As will be shown later, the new policies implemented coupled with the industrial climate in the country, i.e., the increasing tendency to export, diminished the effectiveness of the massive support system which previously has favored the development areas.

The Industry. The overall economic policy and the industralization policies in particular , had the expected effects on the industry. It was found (Pomfret and Toren, 1980) that factories which manufacture for export are price responsive and have therefore been favorably influenced by government policies which increased the financial incentive to export. The share of the industrial exports in Israeli's total exports (goods and services) grew from 42.2 percent in 1970 to 49.3 percent in 1977 (Ministry of Industry and Trade, 1981, p. 9).

The impact of the policies and the overall new economic circumstances on the "economic performance of the plants in the community" and on the industrial structure had various effects on the plants in the towns and region, depending upon their type. The overall effect was of weakening the industrial base, there was a high rate of turnover among small plants and workshops, and the rate of unemployment has increased.

The plants in the region were categorized into three groups in order to better understand the impact of the policies in the period 1974-1980:[6]

1. The "first generation" plants.
2. The regional chemical plants.
3. The "new generation" plants.

1. The "First Generation" Plants. The group of the "first generation" plants includes: the textile plants; "Kittan Dimona" and "Dimona Textile" ("Sivi Dimona"); and the glass plants, "Tempo" and "Foenicia."

The textile, leather and clothing branch has contributed much to the goals of industrial development in its early period, but its weight has been progressively decreasing during the whole period with regard to output,

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[6]The "economic performance" of each category of plants will be discussed considering the impact of governmental policies, the entrepreneurs (and/or the managers) policies and behavior, and the effect of the economic context of the country. The impact of the community and its labor force will be mentioned, but will be discussed in detail under the paragraph "Community."

employment and capital. In the year 1970, its part in exports has grown to a record of nearly 17 percent of the total exports, but from that year onwards it began steadily decreasing, partly because of the larger growth of the metals and chemical branches and partly because of declining demand in the world markets following developments there. This was one of the branch groups where internal changes in the competition of products and technologies were of particular importance. The development of this group of branches was characterized by a transition to production of goods of ever higher quality and design such as clothing of leather or fur, fashion goods, knitted and synthetic goods produced by modern techniques. These characteristics were applicable to most of the plants in this branch, especially in the central parts of the country and plants like "Polgat" in Kiryat Gat. But many of the plants in the development areas, including the two big textile plants in Dimona, have basically continued to operate with the same obsolete technologies and inefficient production processes, they have been equipped with since the late 1950s. Both plants, which have been established mainly in order to provide jobs, have operated as plants which "maximize subsidies." (This type of plant tries to exploit all subsidies available without trying to be efficient and productive by upgrading the technologies and the labor force as expected from a plant that maximizes profit. When subsidies are not available

anymore, and the plant is on the verge of closing down, it usually gets more support from the government to prevent massive unemployment, since this plant usually employs a great share of the town's labor force.)

In 1975, both plants have begun facing problems. The main reasons were: a) changes in the government policies. Ending the period of massive support to plants in the development areas. b) In the case of "Kitan Dimona," "Cllal," the "parent" company has decided to stop supporting inefficient an unprofitable plants. In the case of "Dimona Textile," it has changed hands since its establishment each new owner has tried to get more subsidies, and the plant itself operated inefficiently and accumulated losses. In 1975 the plant was transferred to official receivership and in 1979, a Swiss company, headed by one of the richest Sepharadic Jews--Gaáon bought the plant.

Both plants have suffered from low work ethics, hidden unemployment, and low quality of the final product. In "Kitan Dimona," the first step taken was to fire workers (some 236 out of 1638 employees in 1977) inspite of worker's unrest, demonstrations and strikes. The efficiency of the labor force increased, the productivity increased, and the plant was able to begin exporting. In "Dimona Textile," some 500 workers were fired (between the years 1972 and 1975), and the new owners planned to change technologies, and to increase the value added of the production by

beginning to produce final products besides spinning and weaving. Nevertheless, both have problems of marketing in the local markets as well as in the export markets. Textile is highly competitive, and it is very difficult for Israeli companies to compete with countries like Taiwan and China which pay very low salaries to the textile employees. Moreover, the local market is dumped with cheap imported products.

The textile plants became the symbol of the "first generation" plants, however, the development of the glass factories in Yerucham followed a path similar to that of the textile factories.

"Foenicia" and "Tempo," both were established to supply jobs for the local residents of the towns. Both have enjoyed massive government support over the years, and both have begun encountering problems around 1975, due to the decrease in demand for bottles. In the following years the plants have encountered more difficulties: Export markets were closed down, the machines and the equipment became obsolete (especially in "Tempo"), and the owners were unwilling to renew them due to the unprofitability of the plant. (For more details, see chapter V.) In 1979, the private owner of "Tempo," who had another big plant near Tel-Aviv had decided to close down its plant and "Koor"--a company which belongs to the Labor Union and is identified with the Máarach (the Labor party--the opposition party) had

decided to buy the plant and to merge it with its plant "Foenicia." The process, similar to the case of the textile plants, was of gradually firing employees and changing somewhat the production lines in order to operate more efficiently. Nevertheless, the plant has continued to lose, and only the support provided by "Koor" prevented massive discharge of workers and closing down of the plant.

The "oldest" plant is "Lon" which is a small cosmetic laboratory, which was established in Yerucham in 1963. From seventy workers in 1974 it decreased the number of workers to thirty-five in 1980. As most other plants it has encountered problems in marketing, in the local as well as in the export markets.

There is one exceptional case among the "first generation" plants, which has succeeded in its economic performance. The plant was the last to be established among these plants. This is "Negev Ceramics" (1972). The plant was located by a private entrepreneur in Yerucham because of the availability of the raw materials the plant needed for manufacturing tiles. The plant was not planned at the beginning to export, but after it began manufacturing, it was found that there is an export market for the plant's products. Since then it began exporting over 50 percent of its production. Due to the successful operation of the plant, the plant has recently renovated one of its furnaces, and bought another new one for an additional production line.

There are several factors in common to all the "first generation" plants which may help in revealing the main causes for the weak economic performance of the plants, they are: a) All plants were located in the towns because of either personal connections between the owners and the late Minister of the Treasury--P. Sapir, who actually pressed them to locate their plants in the development towns, or because the firms were "maximizing subsidies," or both. Since the owners have invested a very low share of the total investment from their own capital, provided the massive subsidies available from the government, the owners were not motivated by econnomic considerations, and did not have enough incentives to operate the plant efficiently. b) the relative advantage of the location (for those plants which were based on the raw material in the region) was found to be negligible. The distance from the markets and the sea and air ports, were found to play a more important role than the proximity to the physical location of the raw material. Moreover, distance--in its physical and mental senses from the central parts of the country--had a strong negative effect on the quality and quantity of the labor force. (This issue will be elaborated later, under "The Community.") Distance was also the main cause for the persistent shortage of skilled and professional labor force, which was another factor in weakening the economic viability of the plants. Moreover, most of the managers have commuted from outside communities, as far as Beer-Sheva and Tel-Aviv.

The presence of the manager near the plant found to be important for the proper operation of the plant, and this lacking in most cases in development towns. c) Due to the circumstances in which the plants were established, and to the massive governmental (or another public body) support, the plants did not upgrade their technologies, and have operated for many years with obsolete technologies and inefficient production process (except for "Negev Ceramics"). This was one of the main causes for losses, and had counterproductive effects on the labor force. (See the discussion on "The Labor-Force.") d) All of the plants have encountered difficulties when governmental industrialization policies and the overall economic circumstances have changed. e) There are some similarities in the way the plants have tried to overcome the difficulties. The first step was to increase productivity by firing workers and changing somehwat the technology. This was done in order to increase the competitiveness of the plant so it can export. Two plants ("Textile Dimona" and "Foenicia") have actually continued to survive being supported as in the previous period--due to political or semi-political considerations.

To sum up, it can be said that the economic performance of the "first generation" plants was affected at this period (1974-1980) mainly by the sharp changes in the governmental policies and the economic situation. They have triggered negative processes which have been developed in the plants for a decade or more.

2. The Chemical-Regional Plants. These plants have enjoyed the status of "national project" since their establishment and as such, have benefited from governmental support beyond strict economic considerations. The three plants, "Dead Sea Works" (1952), "Negev Ceramics" (1951), and "Periklas" (1972) have been affected more by the demand for their products, and the prices in the world markets, rather than the economic and industrial situation in the country, as was the case with other industries.

All three are managed by "Israel Chemicals Ltd." (I.C.L.), which is the parent and holding company of a group of chemical enterprises engaged in the development of Israel's main natural resources. I.C.L. is government owned.

Each plant is an independent legal entity, and each has joined the I.C.L. with its own history and type of product. The "Dead Sea Works" had heavy losses for many years, and only for the last few years has begun to be profitable. It has started paying royalties to the government and dividends to its stockholders. "Negev Phosphates" is less profitable. The plant is highly sensitive to the fluctuations in the world market of phosphates dominated by Morocco and the U.S.A. The activities in the market depend upon the grain market, the yearly weather, on the one hand and on the fluctuations in prices, differences among rates of local inflation and the

changing rate of the dollar on the other hand. At the time of the study, two of the N.P.L. projects are losing money due to lack of relative advantage in the world markets. "Periklas" produces a high quality product and has created its own market. It has been profitable almost from the beginning.

"Negev Phosphates" and "Dead Sea Wroks" (until a few years ago) can be categorized as "maximizing subsidies" which probably had an effect on the ways they have been operated. But the relative advantage of their products in the world markets, and being "national projects" have acted against processes which characterize the "first generation" plants, which means, that they have enjoyed better management over the years, modern and upgraded technologies, and they have hired the "cream" of the labor force in the region. (This issue will be discussed later.)

Under the category of "regional plants" the defence-related plant located in the region can be considered but its operation, objectives and goals are independent of any economic considerations and circumstances, and it is impossible to evaluate its "economic performance."

3. The "New Generation" Plants. Except for "Friction"--a modern and advanced plant that was established in 1975 and closed down after a few years--no major plant (in terms of quantity) has been established in Dimona or

Yerucham. Over the period 1974-1980, some forty new plants and workshops have been established and a similar number were closed down. The high turnover of small plants and workshops has continued. Small textile and sewing plants have encountered problems in marketing in the local markets, due to competition with cheap imports.

Among the newly established plants, those which have survived longer, or have good chances to survive, are either service suppliers (like "Sodom Metal" or "Brand Metal" which are locksmith's workshops), or modern, technologically advanced plants which can operate efficiently. In any case, they had to be able to compete with similar plants in the central parts of the country, since they basically did not enjoy anymore much favorable treatment.

"Brand Metal" and "Long John" (sewing workshop) are newly established plants and services which try to be competitive by keeping high work ethics, keeping schedules, producing high quality products. These plants and other, older ones have to overcome several difficulties, among the severe ones: finding the necessary, qualified labor force, overcoming the disadvantages of the physical and mental distances (image), etc. Under the economic circumstances in the period 1974-1980, and the governmental policies, the probability of these kinds of services and plants to perform successfully was low.

In sum: the "economic performance performance of the plant in the community" was heavily affected at that period by changes in the government industrial and economic policies. The ability of the plants to survive depended upon the circumstances in which they were established and the ways they have been operated since their initial stages. The quality of the labor force was affected and affected as well the "economic performance of the plants" as will be discussed next.

The Community. The various socioeconomic indicators show that in the period 1974-1980, the well-being of the communities in Dimona and Yerucham has improved (chapter III). The median years of schooling in Yerucham , for example, increased from 4.2 years in 1967 to 7.5 in 1977. (The increase in the whole country was from 8.3 to 10.0.) In both towns, the share of big families has continued to be large, but the "dependency ratio" decreased somewhat, relative to an increase n the whole country. In 1978, the "dependency ratio" was 1.13 in Dimona (1.14 in 1967) and 1.23 (1.31 in 1967) in Yerucham. The density of housing has improved as well, in 1972 55.4 percent of the families lived in density of less than 1.5 persons per room. In 1980, it increased to 58.1 percent while in the whole country it has decreased from 79 percent to 77 percednt in 1977. Another indicator of welfare is the rate of motorization which has increased as well. In Dimona, in 1973 there were 28.8 motor

vehicles per 1000 population and in 1978 it was 43.5 (increase of 51 percent). In Yerucham it increased from 18.3 in 1973 to 24.8 in 1978 (an increase of 35 percent) while in the whole country the increase was from 88.0 to 115.5 between the years 1973 and 1978 (an increase of 31 percent).

These are only a few indicators which show that the socioeconomic situation in the development towns of Yerucham and Dimona has improved. Inspite of the fact that these indicators show also that the gap between the towns and the whole country has been narrowed down--since some indicators show greater improvement in the towns relative to the improvement in the whole country. The feelings of isolation, seclusion and being different--the feelings of the "Island Phenomenon" became stronger (see chapter 4.3).

As the model suggests, the "Island Phenomenon" consists of two parts: a) socioeconomic differences and b) distance (physical and mental). From the socioeconomic point of view, in the period 1975-1980, there was still a concentration of immigrants who came from Asian and African countries in both towns. In Dimona, in 1977, 43.2 of the residents came from Asian and African countries, compared to 21.1 percent in the whole country. In Yerucham, the share of those who came from Asian and African countries was 47 percent in 1977.[7] These ethnic differences implied also

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[7]These percentages do not include those who were born in

socioeconomic differences between the towns and the rest of the country, and especially the metropolitan areas (see chapter 5.1). There is no doubt that in some slums and a few development towns, closer to the big cities, the objective socioeconomic indicators of the communities showed an inferior welfare condition of these communities, but the distance in its physical and mental senses played a major role in creating feelings of isolation and seclusion. Moreover, at that period, the issue of the ethnic gap between the Ashkanaizim (those who have immigrated from Europe and America) and the Sepharadim (those who have immigrated from Africa and Asia), became one of the most controversial issues in the Israeli society when socioeconomic gaps, equality of opportunities and the historical circumstances of their development were discussed. These added to the subjective feelings of being different, underprivileged and neglected.

As was stated before, the distance in it physical and mental senses played a major role in creating the "island phenomenon." The accessibility of both towns to Beer-Sheva and to the central parts of the country has been improved as the increase in the rates of motorization shows, but this was not enough. People continue to be dependent on

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Israel to parents from Asian and African countries. The share of those who have immigrated from Asian and African countries and their children was 80 percent to 90 percent of the population while in the whole country the share was 46 percent.

public transportation which was not very frequent,[8] and stopped operating quite early (from Beer-Sheva to the towns around 9:30 p.m. and from the towns to Beer-Sheva around 10:30 p.m.) These actually cut those who did not have a private car from any social and cultural events in Beer-Sheva. Moreover, the rate of private telephones was low and there were only few public telephones, most of the time out of order.

The physical and inaccessible distances coupled with the socioeconomic differences laid down the ground for feelings of mental distance, isolation and seclusion, i.e., the "island phenomenon." Residents in Yerucham and to a lesser extent in Dimona felt remote from the metropolitan areas and from centers of decision making. The central parts of the country symbolized for them a place with better perspectives for the future and more chances to advance. Those who were more exposed to the life in the metropolitan areas--mainly ex-soldiers and the young couples--have developed greater expectations regarding their life, occupation, soecioeconomic status, etc. These, in turn were in sharp contrast to the reality in the development towns, and sometimes to their own capabilities. Nevertheless, expectations played a major role in the community behavior,

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[8]The minimum time of waiting was fifteen minutes for the buses traveling between Beer-Sheva and Dimona, and the maximum time of waiting was twenty minutes. In the case of Yerucham, it was thirty minutes and sixty respectively.

as will be shown later.

The labor force, its qualities and quantity--as an integral part of the community--was affected by the same factors as the community, in addition to industrial and employment factors. The various segments of the labor force, were affected differently. The labor force mix can be divided into four sectors: a) The males, heads of families, who were mainly employed in the regional chemical plants and in the local plants. The unemployment rate among them was quite low. Managers and those who are in charge of personnel--especially in the local plants--had complaints regarding the quality of this segment of the labor force. The common complaint of the managers was that the quality of the work of an employee in their plants were inferior to similar work done by employees in the central parts of the country. The work ethics of the employees were low, and as evidence, they brought the situation in which they had to hire another 30 percent of the needed workers to compensate for the low quality.

The low quality of the labor force stems mainly from the general atmosphere of dependency and helplessness and from the quality of working life in the heavily subsidized plants. Both sources encouraged low work ethics, low motivation for progress on the job and excellence. This in turn had an effect on the economic performance of the plant. The price of labor became higher, and some plants like

"Foenicia" and the textile plants found that they could not be competitive in the markets. b) The segment of the younger generation, ex-soldiers and youngsters (ages 22-29). This segment, at the time of the study, was the most problematic segment. The rate of unemployment among this segment was very high, the number of job vacancies available for this group was very limited, and most of them were either in the textile plants or in small workshops. The work in the textile plants was rejected by many of the unemployed due to the low salaries, harsh work conditions and the increasing rate of Arab labor force in the plants. But they also rejected jobs available in the small plants and workshops, belonging to the new generation even though these plants were characterized by high work ethics and improved quality of working life. The main complaints against the work in these plants were that they demanded much in terms of keeping schedules, accuracy and high quality of the final product. The opportunities to be trained on the job, to progress and to acquire new skills were overlooked by the young unemployed. Another factor which contributed to the unwillingness to go to work were the unemployment benefits which were paid to the discharged soldiers. They were quite high and almost comparable to the wages paid in the textile plants. Moreover, among the youngsters in this segment, very high expectations--concerning their future life--prevailed.

These expectations have further contributed to their rejection of available jobs. They stem from the atmosphere in the towns which has been developed over the years, the way these young people were educated and from the exposure to the life in the central parts of the country. It should be noted, that in the previous period (1967-1974), the education system in Yerucham and especially in Dimona has been expanded and developed, and the whole system has been geared mainly towards "white collar" skills and professions. Expectations have been developed consequently. At that time, only a small fraction have graduated, and they have been successfully absorbed by the then existing industrial and service systems. In the next period 1974-1980, masses of graduates--from the enlarged education system--after serving in the army, were looking for jobs but their search for suitable jobs could not be satisfied by the laggard industrial system.

An important phenomenon which has surfaced was the low quality of the human capital of the graduates in the development towns, i.e., a graduate of a high school in Dimona or Yerucham had less skills compared to a similar graduate of a high school in the central parts of the country. The same was true for other skills and profesions such as a typist or machinist. The results of the high expectations and low capabilities were disappointment and frustration. c) The women--this segment has begun to be

active in the labor force, when available jobs were offered, especially when the two big textile plants were established in Dimona, and the glass factory was established in Yerucham. Nevertheless, this kind of work satisfied this segment until the third period, but since then two problems have emerged. First, the salaries and wages payed by these plants were very low and second, the work in these places could not solve the employment problem of the young females, ex-soldiers. They faced the same problems as the young males, graduates of high schools. Less attention was given to this segment as it was considered to be secondary to the main labor force.

d. Arab labor force. Arab labor force from the West Bank and the Gaza Strip was introduced to the Israeli labor market since 1967. At the beginning, Arabs were employed mainly in agriculture, and later on have been replacing Jewish workers in difficult and low-paid jobs refused by the Jewish workers. In Dimona, there were some 350 workers who commuted everyday from the West Bank by taxi cabs since they were spread over many small towns and villages. The price of transportation was high. The Arab workers occupied the jobs in the lower level of the job ladder in the textile plants. Only a few, with some skills have been able to climb up the ladder and to be employed in better jobs. The availability of such cheap labor force has further discouraged the owners of the plants from upgrading

the machinery in their plants. Moreover, the involvement of Arab labor force in specific jobs has further increased the bad image these jobs had, and the refusal of Jewish workers to take the jobs.

In sum, the main characteristics of the labor-force mix in the priod 1974-1980 were: a) Increasing rate of unemployment espeially among the young genration, due to the laggard industrial base, its bad image and its impact on the quality of the labor force over the years. All of these had a negative impact on the economic performance of the plants.
b) There was a decrease in the number of local residents working in their towns, and increase in the numbrs of employes who commuted everyday to the towns. On one hand it can mean a progress in the job ladder for the local people, but it also means that highly skilled professional and managerial workers were in shortage in the towns, besides shortage in cheap labor force. Both kinds of labor force were brought from outside.
c) The regional chemical plants took the "cream" of the labor force, and the local plants had to hire workers from the less capable segments.

Suitability. The suitability of the community to the industry and vice versa was discussed already throughout this chapter. The main points to be emphasized are: in the period 1974-1980, the community in both towns was less suitable to the plats (the local ones) and had a negative

impact on the economic performance of the plants. The quality of the labor force was inferior, and there was a shortage of managerial, professional and skilled workers. Many of the needed labor force had to commute everyday from neighboring communities. The various amendments to the laws and regulations which previously have encouraged investments in development areas, coupled with the changes in the ecoomic situation and policies in Israel, have lowered the suitability of the communities in the remote development towns to industrial plants.

The suitability of the communities to the regional chemical plants has not changed. The main advantage these plants had was the regional labor market and in some cases the whole country was actually their labor market, which enabled them to hire the best qualified workers.

The suitability of the industry to the community was the most severe problem at that stage. As was discussed before, the plants in the towns and region should be divided into four subgroups, since each group differed in its suitability: a) The "first generation" plants were the least suitable ones. They paid lower salaries, the quality of working life in the plant was inferior, it did not conribute to the development and progress of their employees, on the contrary, they had counterproductive effects on the quality of the existing and future labor force. b) The "new generation" plants were found to be

quite suitable to the existing and future labor force. They paid good salaries and the Q.W.L. in the plants contributed to the human capital of the employees. The main disadvantage they had was their small size and hence their inability to replace the big "old generation" plants, in terms of number of employees. c) The regional chemical plants were found to suit very well the communities. There were differences among the three plants analyzed in this study, in terms of their contribution to the communities. For example, "D.S.W." paid the highest salaries among the three, and "N.P.L." had a lower "Q.W.L." compared to the others, but generally they were suitable plants. d) The defence-related plant, although physically located near the two towns, did not contribute as expected to the towns. This is a type of a "green field industry" (see chapter 6.1). It was planned that the plant will employ a great share of the town's labor force, but due to the slow development of the communities, they have not been successful in attracting the needed labor force and most of the employees commuted from communities with a higher standard of living. The jobs in the lower stage of the job ladder were done only by workers from the two development towns.

Community Behavior. As the model points out, the community behavior is the product of several factors. The most important ones are: The social performance of the

community (the "island phenomenon"), the community's socioeconomic characteristics, and the economic performance of the plants (indirectly, through "suitability"). It sems that all factors had contributed to both types of "community behavior." a) Job behavior--the period 1974-1980, and especially the last few years were characterized by high turnover of employees in the local, failing plants. Workers who were not satisfied with the work in the plants, quit their jobs, and began to look for different, better jobs. Since there were not many alternative jobs in the local plants, and the regional ones hardly hired new employees, many of the town's residents went to seek jobs in the neighboring communities. The unemployed ex-soldiers preferred to take unemployment benefits, they were entitled to, rather than to take the undesired jobs. But the most common reaction to the employment situation was emigration. b) Migration--Between the years 1973-1978, Dimona has still enjoyed an increase in its population. There was an increase of 3.8 percent (1000 residents) from 1973 to 1978. But the balance of internal migration was negative. For the years 1973-1978, the average rate of emigration per year was -31.9 per 1000 residents. The situation was worse in Yerucham. There was a decrease of 3.2 percent of its population between the years 1973 and 1978. The balance of internal migration was negative, and the average per year was -22.4. In 1977 it was -39.4 per 1000 residents. The

increasing rate of emigration was clear evidence of the deterioration of the well-being of the community and the employment situation.

CHAPTER VIII

CONCLUSIONS AND RECOMMENTATIONS

This study has concentrated mainly on the interface between society and planning. More specifically, it examined the impact of one aspect of population dispersal policy (the planning and implementation of industrialization policies) on the community in the development town.

Many of the studies, dealing with population dispersal, overlook the policy factors and their effects, and concentrate on the "natural" processes of migration (quantities of emigrants and immigrants--see chapter II). This study highlights the impact of governmental policies on the communities undergoing industrialization (as part of the population dispersal policy) and their consequences.

The main justification for highlighting governmental activities is the underlying assumption that the whole process of "population dispersal" is an "artificial" process, which acts against the nature of human beings--i.e., people tend to concentrate together because they feel better when they are in the center in its various meanings (physical, social, political, economic, etc.)--and only a strong governmental or public body, with vast resources and influence is able to carry on such an endeavor.

In order to carry it successfully, the government has to assure that the welfare of each individual in the community will exceed his welfare in the metropolitan area (plus transfer costs). Since it is the government target to settle people in remote areas in order to achieve national goals, and since it acts against the natural processes, these make each sphere of life crucial for the residents in the remote areas. Each sphere of life, i.e., welfare, employment, culture, politics, can serve as a factor which mentally "shorten" the distance to the center, and helps the individual to feel that being physically removed from the center, does not mean that he is not part of the whole community in the country in other ways. (This issue is discussed later in this chapter.)

Based on the assumption that the government has to assure the welfare of each individual in order to implement the population dispersal objective successfully, the study has suggested examining the implementation of the industrialization and employment policies and to evaluate their contribution to eliminate the feelings of isolation and seclusion, or in the language of the study, the "island phenomenon." It was assumed that in remote areas the interdepencies between the community and the industry, or the welfare of the individual and his employment, are stronger and clearer compared to the same relationships in the metropolitan areas. Moreover, they are an important factor in the success of the population dispersal policy.

Two crucial issues which are part of the general subject of the evaluation of the industrialization policy have been raised: 1) Based on the existence of the "island phenomenon," and the weak industrial base in the development towns at the time of the study--what were the main historical causes of evolution of the situation? 2) What were the effects of the weak industrial base on the communities?

These two issues are part of the broader issue of "suitability" between the community in the non-metropolitan areas and its industrial bases. By using the various criteria of suitability to evaluate the extent to which the industrial bases of the towns were suitable to the communities' characteristics and objectives and vice versa, the two issues of the "island phenomenon" and its effects have emerged.

The rest of this chapter will concentrate on two major subjects:

1. The historical explanation of the development of the "island phenomenon" and its effects--using the criteria of "suitability."
2. Policy implications to prevent and remedy the situation, and suggested solutions.

The last paragraph will be devoted to conclusions and suggestions for further research of issues which were not looked at, so far, in the literature.

8.1. Historical Explanation of the Development of the Situation

For the last few years, Yerucham and to a lesser extent Dimona as well as several other development towns in Israel, have begun facing increasingly difficult circumstances. The main evidence for the state of crisis was the increasing rate of emigration especially among the young adults and the discharged soldiers. Politicians, bureaucrats and public figures on the local and national level, as well as residents of the communities, pointed to the employment area as the main source for dissatisfaction and hence emigration. In this area a paradoxical phenomenon has surfaced: an increasing rate of unemployment on one hand, and a severe shortage of needed workers in the industrial plants on the other hand, especially in plants belonging to the industrial plants of the "first generation" (established during the late 1950s and the early 1960s). These plants filled the job vacancies with employees from the West Bank and the Gaza Strip. The plants also faced operational and financial problems stemming from competition in the local and especially the export markets.[1]

The main finding, analyzed and discussed by this study was the cause for weakness of the economic base of the development towns, and the creation of the "island phenomenon."

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[1]For a more detailed description of the situation, see chapters IV and V.

The crucial cause found to be the deterioration of the "suitability" between the existing local plants and the town's labor-force mix. "Suitability" defines the extent to which the plants in the community are suitable to the community.

The notion of "suitability" consists of two main characteristics: a) The suitability of the community to the industry, in the sense that there are advantages for the plant to locate in the community, so that it can exist and operate efficiently. b) The suitability of the industrial plant to the community, i.e., a plant which employs the various segments of the community's labor force and fulfills the community's objectives in terms of economic and social progress. As can be seen, this definition of "suitability" is based on criteria which are different from the more "common"criteria based on economic "success" and "failure." The criteria suggested for "suitability" of plants in remote areas should be defined, as going considerably beyond the routine micro-economic profit on invested capital calculations.

The definition of "suitability" was based on there principles: 1) "suitable for whom?" The well-being of the community and its individuals was given top priority rather than the government or the industry. Different plants would be located if the government needs were given top priority (i.e., export plants or more capital intensive plants) and

another group of plants would be established if the location were based on industrial considerations solely. 2) "Suitable how?"--there are various objectives which can be reached through industrialization. This study emphasized the community's well-being rather than increasing export for example. 3) "Suitable when?"--this question introducts one of the important features of "suitability"--the notion of time. There is a dynamic factor embodied in the definition. "Suitability" is changing over time due to changes in the industry, changes in the community and especially its labor force, and changes in government objectives and policies.

Based on these criteria, an analysis of the trajectories of the plants in the communities and the region was conducted to account for the situation.

It was found that at the time of the study, there was still some degree of "suitability." By using the criteria of suitability constructed, the analysis shows that the regional chemical plants were suitable for some parts of the labor force (males, heads of families), but the number of vacant, available jobs was extremely limited, and therefore these plants could not serve the new segment of the labor force, the young, ex-soldiers. Only 26 percent of the residents of Yerucham and 27 percent of the residents of Dimona were employed in the chemical plants which offered well-paid jobs, with opportunities for progress. There was some degree of suitability between the existing local plants

and some other segments of the labor force--women, elderly--but these plants could not serve as a sound economic base for the major parts of the labor force: males, heads of families and the discharged soldiers.

The low rate of suitability was found to be one of the major factors in the increasing rate of emigration, and hence further hurting the well-being of the communities and reinforcing the "island phenomenon."

The analysis of the trajectories of the plants in the communities and the region, coupled with the historical development of the communities and government policies over the years shows that historically, the situation of "unsuitability" has evolved as a result of unequal development of the industrial sector and the communities in the development towns, while the government, which was heavily involved in the initial stages of development has gradually abandoned (intentionally or otherwise) its involvement--this was not expressed in the espoused policy but can be found in the policy in use. As a result nobody has encouraged coordination between the development of the towns and the different pace and direction of development of the industry.

To be more specific, the roots of the problems which surfaced in later years can be traced back to the initial stages of the establishment of the development towns, and the beginning of the process of industrialization,

i.e., in the initial years, the "island phenomenon" was created, and was reinforced over the years by the "unsuitability."

The "island phenomenon" was defined as a situation in which the community in a development town has characteristics of developing societies in the midst of a country with characteristics of well-developed societies, i.e., the developing communities are lagging behind the country. The phenomenon consists of two factors: the first is the "distance" in its physical and mental sense, and the second is the socioeconomic differences between the community in the development town and other communities in the country.[2]

In the first years of statehoods, and at the initial stages of the town's development, the decision taken and the policies implemented, have actually created the towns as "islands." These "islands" consisted of new immigrants, mainly from African and Asian countries who were settled in remote areas. They were different in their socioeconomic characteristics from the veterans in the metropolitan areas, and although the declared policies were meant to help them enter the main stream ("Mizug Galiot"), the policies in use, and the ways they were handled, reinforced their isolation and the continuous existence of the "island phenomenon."

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[2]The policies on how to eliminate the phenomenon which has a strong impact on the community, its labor force and their behavior will be disussed in section 8.2.

Every sphere of life was controlled and managed by outsiders--those who belonged to the various centers: economic, political, social, etc.

> It was widely accepted prior to 1973 that political power in the country was wielded by the limited group of Western, especially East European, pioneers who had come to Israel as youngsters during the Second and Third Aliyot. Despite rapid expansion of the population from vastly divergent backgrounds, the hold of these pioneers on the nation's political institutions remained uncompromised. Although encouraged from the start to develop local governmental services in the growing number of Mashovei Olim (immigrant villages) and development towns, political power quickly came to be concentrated in the country's national institutions, the party, the government ministries, the Knesset. Local government was at its ebb in the early 1950s with established towns and Kibbutzim failing to absorb their share of the immigrants and the new towns proving so inexperienced that outsiders were sent in to manage their affairs until they could learn to fend for themselves. The turning point came late in the 1950s when talented local leadership began to emerge, gaining a growing role in local affairs. (Greenberg, 1979)

This situation has created a strong dependency of the whole community on the various government departments and the different public bodies like the Jewish Agency. Moreover, employees were dependent on their outside employers who commuted everyday from neighboring communities and as far away as Tel-Aviv.

In the case of the remote development towns, this reliance on outside agencies was even greater due to the problem of accessibility. The rate of private cars was very low and the residents were highly dependent on infrequent

public transportation--another outside public body. The weakness of the communication systems further aggravated the situation.

The consequences were that everything was organized for the settlers, and whenever something was not supplied as demanded by the residents they claimed: "We should get it, we deserve it." This has eliminated any attempt for self-reliance, and weakened the settlers' determination to achieve anything by themselves, and their self-confidence.

In this atmosphere, new industrial plants were brought--rather than have chosen to locate themselves--to the region. A wide system of subsidies and grants was formulated to encourage entrepreneurs to locate their plants in the towns and region, but they played apparently only a minor role in pursuing the industrialists to move to the remote places compared to ideological and especially personal pressures which were put on them. These initial circumstances in which the plants were brought to the towns, did not promise much economic success, but at this stage, they have promised at least decent salaries and suitable work conditions for the new residents who otherwise would have been employed by relief work or have been unemployed altogether.

From a strict economic point of view, the cost of the policy was very high: ". . . Location subsidies per additional employee in the textile industry between 1958 and

1965 exceeded location subsidies per additional employee in all other industries" (Toren, 1979). But no study or analysis was conducted to evaluate the extent to which these plants (the local ones) rather than plants belonging to other branches were suitable for the community. It seems that the characteristics of the industries (textile and glass) brought were suitable for the unskilled capabilities of the local people. The rate of growth and the positive balance of migration (especially in Dimona) between the years 1957-1963 may give some indication of the successful beginning of the industrialization process. Nevertheless, the jobs in these plants and the way they were managed did not allow for more independence. The jobs were routine and boring, and there were not any job ladders to allow progress and advancement on the job. They were managed by outsiders, since no one from the community had any managerial or high skilled position. These plants were also perceived as belonging to the "outside" world.

The first period was followed by a period of recession in the whole country. Some of the development towns--and among them Dimona and Yerucham were not affected as badly as other locations due to the continuously massive support by the government and the relatively high percentage of residents employed by relief work.

The second period (1966-1974) was a period of prosperity and a high rate of economic growth in the whole

country. These were the result of three main events: The "Six Day War," the consequences of the recession period--surplus of unemployed labor force which entered the job market, and a very high economic growth rate (approximately 10 percent) without any price increase. The situation in this short and episodical period has actually masked, to some extent, the processes and developments that have been taking place in the development towns. At that period, the towns grew, the education system expanded, and the rate of participation in the educational system increased although the rate of dropouts was still rather high. A realistic evaluation of the events and achievements could not be conducted under these circumstances. Although, at that stage there was a flourishing of studies and books evaluating the historical developments of the towns and their performances,[3] no real criteria could be applied at that time. The young generation was still in school, plants have just been established and operated with heavy subsidies, and everybody in the country have benefited from the period of prosperity and growth.

The real test could be done later on in the third, more "normal," period (1974-1980), and in this period, the real results could be evaluated. At that stage, the problems rooted in the first period have surfaced.

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[3]See chapter II, "Literature Review."

The period 1974-1980 was characterized by several changes in governmental policies which had direct and indirect effects on the towns: a) Population dispersal and the development towns lost their high national priority. Other objectives like settling the West Bank and the Gaza Strip got higher preference. This process has begun to take place in 1977 when the Labor party was replaced by the Likud (National) party as the ruling party in the Israeli government. Although, in the declared policy, the changes in the priorities cannot be found, in the policy in use, especially in the allocation of resources these changes had their effects. b) Since the beginning of the 1970s the economic policy has begun moving towards a "free market" economy, and less government intervention. Moreover, the "Yom Kippur War" has worsened the balance of payments problems. Both processes have increased the dependency on export. As a result, exporting industries were encouraged. In the development areas there were hardly any exporting plants, the plants there, were not intended and were not capable to export but mainly to provide employment. One of the most important relative advantage these plants had, was being located in the development areas, and hence being entitled to various grants and subsidies. This advantage lost its importance in face of the high benefits granted to exporting industries regardless of their location. Without the continuous support, the plants, which previously did not

operate efficiently--because of this massive support--could not compete and had to close down. Those who survived were those which either were continuously supported by public bodies (like the Histadrut) or those which operated efficiently (the "new generation of plants," privately owned).

There were several consequences to the crisis in the industrial base of the development towns:

a. The most severe and immediate one was an increasing rate of emigration from the towns, especially among the young couples and ex-soldiers.

b. Increasing rate of unemployment, especially among the young generation due to their unwillingness to take boring and unchallenging jobs in the old plants. The high expectations they have developed over their "high school" priod, and their service in the army, have contributed to this refusal.

c. Due to the atmosphere in which the young adults have grown up in, and the quality of the education system, they have graduated with less skills and capabilities. An employee with twelve years of vocational schooling in Dimona or Yerucham is not as capable as a similar employee in the central parts of the country. Moreover, the atmosphere of dependency has added to the unwillingness to work hard and to progress and advance while working. The refusal of ex-soldiers to take available jobs in the successful plants

belonging to the "new generation" of plants stems from unwillingness to undertake jobs demanding "high work ethics" even though these jobs are rewarding in terms of material benefits and future opportunities.

d. On the industrial side: In its short-sighted policies to secure employment for the short-run, the government has helped the survival of inefficient plants which should have either changed technologically, or closed down altogether--as happened to some of the heavily supported plants. The continuous survival of these plants had a counterproductive effect on the community in the long run, in particular on the bored and unmotivated work force. This created a negative image of the community for incoming industries and discouraged the young generation from entering the local labor force.

The overall effects of these developments in the social, welfare and employment spheres was of reinforcing the "island phenomenon." The gap between the development towns and the metropolitan areas has widened in terms of socioeconomic standard of living, and the cultural and political integration of the communities with the whole country has slowed down.

An historical analysis of the process that have taken place since the establishment of the towns and their industrial base shows clearly that the roots of the problems were laid a long time ago, in the first period.

Three "actors" have participated in the process: the community, the industry, and the government. As was explained previously, each has its own direction and pace of development.[4] The various processes taking place in the community are the longest and the most difficult to change (like education, welfare, etc.) compared to processes in the industrial area. Since the main problems the communities faced were in the areas of education, welfare and in related areas, it is therefore complicated and almost impossible to improve the situation immediately, in the short run. Therefore, this study, has concentrated on problems which are located in the interface between the community and the industry. The latter is easier to manipulate and change by government policies.[5] The second part of this chapter will be, therefore, devoted to conclusions regarding policy implications and suggested solutions.

8.2. Policy Implications and Suggested Solutions

The previous chapter--on the historical explanation of the development of the weak economic base of the development town and its effects-- pointed at the government

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[4]See chapter 6.1--"The Theoretical Background for the Model."

[5]This actually occurred in these analyzed case-studies, when changes in policies and political circumstances had strong effects on the community, but unfortunately, from the community's point of view, they were counterproductive.

policies as the crucial factor in the success or failure of industrialization policies in remote areas. This section will dwell on the policy implications from this study, and will suggest some directions for improving the policies. The following subjects will be discussed:

8.2.1. Population dispersal policies

8.2.2. Industrialization of development and remote areas

Throughout this chapter, special attention will be given to the problems stemming from "distance."

8.2.1. Population Dispersal Policies

There have been always a wide range of justifications which support the goal of population dispersal, among them: political, geographical, economic, security and environmental goals. Whenever one of them diminished in importance, there was another one to replace it in priority. The outcome of the existence of an umbrella of justifications was the validity continuously given to the goal. The changes in justifications have only dictated the policy tools and instruments used, and the priority given to the various regions.

So long as the goal is valid, the instruments and the policy tools used to implement the objective may vary. They can range from incentives to encourage development of preferred areas like directing new immigrants, provision of

public housing, industrialization and employment and personal incentives to restrictive measures to curb the growth in the central parts of the country.

However, regardless of the type of justification, the policy instruments used to achieve the goal of population dispersal have to secure the welfare of each individual in the community.

When extreme modes of policy tools are ignored like--forcing people to settle in remote areas as it exists in some totalitarian countries, or directing immigrants without much choice to preferred areas, as has happened in the initial stages of the Israeli statehood--this study supports strongly the view that the only way to assure the implemention of the objective, i.e., that people will voluntarily reside and stay in the development areas will be when the individual's welfare will exceed his welfare in the metropolitan areas and the transfer costs to these places.

Dispersion of population is inherently contradictory to welfare. Human beings tend to concentrate and strive to be in the center (physical, social, political, cultural, etc.). Any policy which removes them from the center should compensate them for the loss in their personal welfare.

This assumption stands at the core of this study.

Population dispersal policies have to overcome the various types of distance in order to eliminate the feelings of isolation and seclusion which are part of the welfare of

each individual. Failing to do so, as the study suggests, may resulte in a wide range of reactions by the residents from changing jobs to emigration from the town.

The study recognizes (and the model presents) three types of "distance:"

a. Physical distance
b. Accessible distance
c. Mental distance

The three were put in some order of rank, according to the difficulty of implementing policies to overcome the specific type of "distance." There exists a "basket" of tools and policy instruments to overcome these distances:

a. Physical distance--this is the most "simple" distance. The physical distance is determined by the actual decision to locate the town in a specific place. There are two ways to overcome the physical distance: one, is to relocate the town, if desired by the government and if feasible, closer to the center--the metropolitan area, and the second, is to increase accessibility by various means (see next paragraph).

b. Accessible distance--The term "accessible distance" defines all the means which help to "decrease" the physical distance. These include on one hand, roads, railways, airports--the infrastructure needed for transportation and the communication system's infrastructure, especially the telephone networks. On the other hand, these include the

frequency of public transportation, rate of private cars per person, and the actual use of telephones. The "accessible distance" found to be a crucial factor in decreasing distance and strengthening the perception of being closer to the center. It should be noted that while the infrastructure part of the "accessible" distance is highly dependent on the rank of national priority given to the place, and hence government policies which dictate the amount of resources invested in infrastructure. The second part--the means themselves are correlated with the socioeconomic standard of living of the residents of the towns. As the standard of living rises and the economic condition of the residents is upgraded the rates of private cars, telephones, radio and television sets in the community increase and accessibility improves. The distinction between the "public" and the "private" parts of the accessibility notion is found to be important from another angle as well; the "private" part indicates the degree of independence the residents of the towns have. When the rates of public transportation and communication systems are increased it enables people to feel less dependent and unconfined to public and government bodies to decide for them where to find jobs or how often they can reach the physical center. On the other hand, as "public" accessibility increases, it strengthens the dependence on governmental and public agencies, the feelings of isolation

and seclusion deepen and the "island phenomenon" is reinforced.

In the context of this study, accessibility is one of the crucial factors when industrialization is considered. Low rate of accessibility has its effects on the plants and on employment. Difficulties in proper operation of the plants stems from distance from the center of marketing, raw material market, pool of skilled and managerial labor force, etc. Better roads and communication systems will undoubtedly improve the situation for some types of plants. But there are plants which belong to industrial branches like electronics, computers and others in the research and development stage which have to be located in the center itself, and any distance may interfere with the proper and successful operation of the plants. At this stage of the country's development, and especially the development of the Negev region, none of this kind of plant can be located in the region.

In both cases--the community and the industry--the government can increase accessibility by improving roads and railways, and in extreme cases build airports. It should also improve communication's infrastructure. Telephone should be perceived as an essential necessity for each one in the remote areas.

c. Mental distance--The less tangible distance is the mental distance. This type of distance is found to have a

strong impact on the viability of the community and on the succes of the plants. It is derived from the rate of accessibility as it is described by the "accessible distance," but some other factors contribute to the creation of it. Among the other factors the most important one is the subjective feeling of being remote and secluded. This feeling does not have to be a product of a physical distance, but rather a consequence of being removed from social, political or cultural centers.

Development towns have been removed since their establishment from social, political and cultural centers, and the only relationship has been their dependence on these centers. Only for the last few years the situation has been changing slowly, especially in the political sphere. Nuclei of local political groups have been developed. There are more mayors of towns among the local residents, and more representatives of the towns in the various political institutions in the national level, including the Knesset, the Israel parliament.

In addition to social and political remoteness, the socioeconomic differences between the towns and the metropolitan areas have intensified the feelings of isolation and seclusion and contributed to the creation of the "island phenomenon." The actual existence of the mental distance and the "island phenomenon" can be observed also among residents of development towns closer (physically) to

the metropolitan areas. The proximity solely does not compensate for the remoteness felt in other spheres.

The importance of "belonging" to social, political or cultural networks, rather than the proximity itself can explain why some other forms of settlements, like a Kibbutz, located in a remote area can exist and function successfully inspite of its physical remoteness. In the case of the Kibbutz, being part of a national network of Kibbutzim, and feeling part of the cultural and social network diminishes the effects of the distance, in addition to the lack of socioeconomic differences between the residents of the Kibbutz and the metropolitan area. Moreover, the higher socioeconomic status and educational level of the Kibbutz's settlers enable them to participate in various country-wide social and cultural networks which further eliminate the impacts of "distance."

The common reaction, by the residents to the state of "island phenomenon," is a search for a way to decrease the various types of distance. The easiest way is to decrease the physical distance, and some choose, therefore, to emigrate to the metropolitan areas. Those who cannot afford it try to change jobs. (This issue will be discussed in paragraph 8.2.2.) Does emigration help in improving the situation? Does the attempt to reduce physical distance solely elimate the "island phenomenon"? Emigration to slums and run-down neighborhoods close to the big cities may help

in improving at least the feelings of isolation by being closer to the center, although it may imply lower quality of cultural and educational systems and worse housing conditions. Moreover, the physical proximity to the metropolitan areas itself may increase jealousy and social pressure (the same way as the exposure to the life in the metropolitan area through the service in the army or the television affect the residents of the development towns). In the scope of this study it is impossible to compare the quality of life in the slums of the metropolitan areas and the development towns, but it is clear that living in the metropolitan areas gives more hopes regarding future chances and opportunities due to the physical proximity to the center, even though these hopes may be found to be elusive.

The development towns were created as "islands" due to historical developments and circumstances, but this situation has been reinforced partially because of inadequate governmental policies regarding distance

Adequate governmental policies should distinguish among the various types of distances as they affect the communities of the remote areas.

Except for improving accessibility to decrease the "physical" distance, "mental" distance can be decreased by strengthening local nuclei of political, social and cultural powers through cultural and educational activities, and by encouraging connections to country-wide networks and

organizatons.[6]

8.2.2. Industrialization of Development Towns and Remote Areas

Securing the personal welfare of each individual was found to be one of the most important factors in the success of dispersal policies. Adequate employment--employment which provides decent salaries and job satisfaction--is an integral part of this welfare. Since the two towns in these case studies, Yerucham and Dimona, are quite isolated from any rural hinterland, the major source of employment they could rely on was industry. Due to the remoteness of the towns, and the materialistic and mental benefits adequate jobs can provide, the importance of the suitability of the industry to the community cannot be underestimated.

Industrialization policies are easier to implement compared to welfare or education policies. Moreover, their impact can be felt in the short run. Successful industrialization policies will benefit the employees as well as the whole town, and actually the whole economy.

This chapter will analyze and discuss the policy implications of this study pertinent to industrialization and employment in remote areas. The main issues will be:

a. Technological change and quality of working life.

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[6]There is no doubt that extensive welfare and educational activities should be continued to further helping in integrating the comunities in the development towns with the rest of the country, but this issue is beyond the scope of this study.

b. Industrialization policies for remote areas.

- The timing of the industrial support
- Regional plants and local plants
- Employment policies
- Entrepreneurship and management

Industrialization policies in remote areas encounter the same difficulty, population dispersal policies, in general, encounter--overcoming the natural tendency of most of the industrial plants to concentrate in the central parts of the country. Excluding cases of industries with locational requirements--mainly the industries which are based on quarries and chemical raw materials--most of the plants prefer to benefit from the advantages the center provides in terms of qualified labor force, proximity to technical, financial and managerial services, etc. Various industrialization programs are formulated to help plants, located in remote areas, to overcome distance and to compensate for locational disadvantage.

Without any policies aimed at changing industrial location, in national perspective, industries filter down through the system of locations, from places of greater to lesser industiral sophistication.

> Most often the highest skills are needed in the difficult, early stage of mastering a new process, and skill requirements decline steadily as the production process is rationalized and routinized with experience. As the industry slides down the learning curve, the high wage rates of the more industrially sophisticated innovating areas become

> superfluous. The aging industry seeks out industrial backwaters where the cheaper labor is now up to the lesser demands of the simplified process. (Thompson, 1969, p. 8)

And it is of course small towns and rural areas that constitute the lowest rung of the filtering process.

This was the case of most of the industrial plants (textile and glass) which were attracted to the development towns, due to massive governmental subsidies and the abundance of low skilled, low paid labor force. Over the years, the quality of the labor force has improved, and it was not a cheap labor force anymore. According to the theories, at that moment, the plant had to either move to a location with cheaper labor force (as happened in a few cases in which plants moved to Arab neighborhoods), to find cheaper labor force in the region (as happened to the big textile plants, hiring workers from the West Bank), or to close down altogether. Since the latter option was rejected by the government due to the threat of massive unemployment, the plants continued to operate inefficiently. The main problem faced, therefore, by the implementers of the industrialization policies is: how to change gradually the nature of the industrial structure in order to make it suitable to the changing needs of the community and its changing character (the dynamic factor) and to prevent emigration of both residents and plants to the central parts of the country?

This question emphasizes the importance of the adequate modification of the industrial structure either on the micro-level--the level of a single plant (as was done by several successful plants like "Negev Ceramics," or recently by the textile plants), or on the macro-level--the level of the whole industrial structure of the community and the region, or on both levels.

Modifications on the micro level pertinent to changes in technology, while those in the macro level pertinent to modifications in the types of plants, i.e., prolonged coexistence and cohabitation of modern, advanced industry and of "first generation" industries. The second type of changes do not exclude simultaneously changes of the first type in the "first generation" plants.

Those two types of changes relate also to the different segments of the labor force. While the first type is relevant more to the older segments of the labor force (males, heads of families, older women), the second one is relevant to the next generation--the discharged soldiers, young women, and in order to attract new groups of population to the development town.

When analyzing the issue of "suitable industry," one should distinguish between the various target groups for whom the industrial base is intended. Different industrial bases will be planned for the existing labor force, compared to the one planned to attract new groups of residents. From

this study it is quite clear that industrial development should be done gradually to meet the changing needs of the existing segments of the labor force, and to prevent unemployment. Leaping development, i.e., development of advancedand high technology, will not serve the existing segments of the labor force, and may provide employment to residents of other neighboring communities (the "green field plant"). Moreover, it is not clear if this industrial base will attract new residents.

The advancement of the existing residents rather than the attraction of new groups was preferred by many of the politicians, administrators, and the residents of the two towns.

The two types of modifications, i.e., technological change and comprehensive industrial change, imply two differenct kinds of policy recommendations:

a. Technological change and quality of working life (Q.W.L.).

The selection of technology and the process of adjusting it to the local labor force is found to be of great importance throughout this study. The type of technology and its suitability has a stronger impact on non-metropolitan industries, compared to its impact on metropolitan ones, since it was found that adequate employment is perceived as a means to advance and almost as a life style.

The notion of "appropriate technology" fits very well the type of technologies which should be adopted. The "appropriate technology" method attempts to recognize the potential of a particular community and tries to help it to develop in a gradual way. This development is based on local resources and progressively builds up the skills of the community. One of its aims is to improve the quality of life of the people (see chapter 6.1).

Few of the plants in these two case studies is found to have "appropriate technologies," among them the regional chemical plants, and some of the "new generation" ones. The rest should go through major changes in order to suit the needs of the existing labor force, and to conbtribute to the employees' Q.W.L.

It is more difficult to implement new technologies in existing plants rather than to build new plants with appropriate technologies, but as one of the managers of the "old generation" type of plant claims:

> In an existing plant, if there is a reasonable chance that the industry can be made competitive, the plant has to go through technological change. Machines and robots have to replace the manual jobs done by employees today. The plant has to be adjusted to the existing labor force, by introducing more automation and control to compensate for the low quality of the labor force. The automation will also improve the negative image of the plants belonging to the "first generation." The plant's owner should subsidize a change rather than losses.[7]

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[7]The manager of "Foenicia" in an interview.

Experts in the area of human engineering, industrial psychology and organizational behavior should be more involved in the reorganization of the plants in order to diversify the range of jobs and to secure opportunities for advancement in the plant (job ladders).

In the case of new industrial plants they should be selected carefully according to the suitability of the technologies to the capabilities of the local residents. They should have diversified jobs in each plant and opportunities for upward mobility.

Among the characteristics of the "appropriate technology" there are two important characteristics which relate to each other: the optimal size of a plant for remote areas, and the appropriate capital/labor ratio. Both are highly dependent on the objectives of industrialization.[8]

A clear indication for the optimal size of a plant was not found in this study. In contrast to studies[9] which suggested optimal size to achieve the goal--mainly, increasing the number of the employed, this study found that size is important only to the extent that it determines or

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[8]For a discussion on the objectives of industrialization and the characteristics of the plants, see chapter 6.1.

[9]See Berler (1970), Kipnis (1976), Spiegel (1966).

has an impact on the quality of working life in the plant (Q.W.L.). It was found that there are very small plants and services (like "Brand Metal") as well as big plants (like the "Dead Sea Works") which have high Q.W.L. It is the technology which determines the Q.W.L. rathr than the size itself. Size should be considered to some extent when the issue of regional versus local plants is discussed (see next paragraph). Size is important in the first stages of industrialization when a critical mass of plants should be established to create a viable industrial infrastructure which will attract residents to the localities, rather than the other way around (establishing first the place, and providing employment later on). But, as was found the technology and the Q.W.L. in the plants for the long range are more important for a successful industrialization process.

In theory the appropriate capital/labor ratio in the plants in remote areas depends also upon the objectives of the industrialization policies, and mainly upon the policies implemented to encourage the process. The availability of the supply of capital and labor in the specific location is a factor which should not be underestimated in its importance. The ratio of capital to labor determines the technology chosen, the size of the plant and other characteristics.

In the case studies of Yerucham and Dimona, no clear indication was found to indicate the appropriate capital/labor ratio. Some capital intensive plants were found to be very suitable, like the "Dead Sea Works" or among the new generation--"Long John," and some labor-intensive plants were suitable in the first stages of industrialization. This ratio should be judged therefore according to the objectives of industrialization with consideration regarding the quality of working life in the plants.

This study has shown already that plants which employed masses of people, and probably increased the rate of employment in the town, in the long run did not contribute to the community and actually were counterproductive. The same was true for capital intensive plants, which due to their high technology served the region rather than the locality they were intended to serve.

In order to assure appropriate technology and adequate Q.W.L., new plants should be accompanied throughout the first stages of development by experts.

Research institutes should be encouraged to help in finding suitable products and technologies for the development towns.

In the industrial sector of the Kibbutz, efforts are channeled into finding and especially adapting suitable technologies to the Kibbutz. The Kibbutz and the

development town, as some sort of Moshavim (collective settlements), share similar characteristics regarding industrialization. In most cases they are located in non-metropolitan areas, and all three of them are constrained by the size of the available labor force. The Kibbutz and some types of Moshavim are constrained also by ideological restrictions, for example they refrain from hiring outside workers.

Regarding the Q.W.L. in the plants and the awareness of its importance it should be noted that in 1979, a collective agreement was signed between the labor union and the chamber of commerce for coordination among the economic organizations to improve the Q.W.L. in Israel. Except for this agreement there was not any other intiative to improve the Q.W.L. and this agreement was not found to be effective at all. The number of applications of the policy to improve the Q.W.L. was small. Most of the attempts to change the content of the jobs, to alter the managerial tasks in order to increase involvement in work organizations were implemented in the Kibbutz. Generally, improving the Q.W.L. is perceived in Israel by the industrial plants as improving the quality of the physical environment or enriching welfare services in the plant.

b. Industrialization policies for remote areas.

There is a wide range of issues relevant to the appropriate industrialization process. This chapter will

highlight the most important factors which emerged from the study:

- The timing of the industrial support

The nature of this study and its scope do not allow for a thorough analysis of the incentives system over the years. Nevertheless, it was found that the timing of the support, and especially determining the period in which the support has to be discontinued, has a crucial impact on the success of the plants.

It was found that high and prolonged protection retarded the develpment of the plants in the development areas. Inefficient firms were permitted to survive, and sectors receiving high incentives tended to show the least improvement in productivity. This was true mainly with the "first generation" plants. On the other hand, plants which belonged to the "new generation" were caught, in their first stages of development, by strong changes in the support system--from a high protection to a low protection--which added to the difficulties they have faced already as plants in remote areas.

The transformation towards encouraging the exporting sector, and decreasing protection in general is a positive change for the whole economy in general, but for those plants and places which did not get to the "take off" point, an abrupt change was found to be disadvantageous.

Another issue which is connected to the timing of the support is a continuous professional follow-up. There is a heavy involvement by the Ministry of Commerce and Industry and other governmental bodies (the local employment agency, etc.), in the first stages of development, but further developments, including the pace and the direction of development are not carefully scrutinized. There is a follow up regarding the financial situation of the plant (due to some tax concessions for five years) but there is not any follow up regarding the employment situation, adaptation to technology, quality of working life, etc.

- Regional plants and local plants

One of the underlying assumptions of dividing the country into regions and towns differing in the priority given to their development and hence in the amount of subsidies and support, was that plants closer to the development town will be more beneficial to the specific place and will help in achieving the dispersion goal. This assumption is found to be erroneous in the regional reality. It was found that some plants, inspite of being located closer to the town were actually regional plants in the sense that due to their technology (too high or too low for the specific town), they have served the whole region. On the other hand, some regional plants do not serve the residents of the whole region mainly due to transportation and accessibility problems.

The issue of the target group: "Who will benefit from regional or local plant" is crucial for implementing and evaluating industrialization policies. The specific target group has to be defined, i.e., "It is beneficial for the individual? the community? the region? the country?" If the assumption--that the welfare of the individual and the community is the most important factor to secure dispersion of population is valid--a combination of regional and local plants will benefit the community and its individuals. This will be achieved under several conditions: First, a distinction should be made between the segments of the labor force. Regional plants will serve better the males, heads of families and the ex-soldiers while local plants which are more accessible will serve appropriately the women and the elderly. Second, there is no doubt that regional plants usually enjoy better advantages compared to the local ones. They have advantages of size, i.e., services, broader labor market, better managers, etc., as well as locational advantages. As such, the employees benefit from a broad variety of opportunities in employment, wages, achievement, etc. But these opportunities should be available to the whole region and all localities. An accessible transportation system should be available to all the population groups, including those from settlements with lower socioeconomic status and lower rates of public and private transportation. In order to eliminate the "island

phenomenon" it is important that every resident will be free to choose his/her place of work, rather than administration and policy constraints preventing this freedom.

It is important that the labor market be free to accept new employees and to enable others to leave. This may yield optimization of the labor market, nevertheless, there exists always the danger in the region that some places will "export" unskilled and semiskilled workers, while other will provide the skilled and managerial labor force. Such a situation will not benefit much the places with the lower socioeconomic status, and their residents may find themselves the first to be fired in recession periods (Bar-El and Don, 1972, p. 235). There is therefore a danger of stratification of settlements according to their occupational status. Nevertheless, the advantages of regional plants may outweigh this disadvantage with adequate policies.

Third, local plants, smaller in scale, should be encouraged to serve the special needs of those groups which do not want to commute, i.e., women and the elderly. Small plants may use appropriate technologies to suit the special needs of these groups and to help them to advance. These kinds of plants will help to create identification with the place and satisfaction.

Towns like Yerucham and Dimona, which do not enjoy any locational advantage, and even governmental subsidies do

not compensate for the locational disadvantages, should aspire to have in the region a well balanced mix of regional and local plants. But more important they should aspire to improve the socioeconomic status of their communities so that they will be able to benefit from the industrial mix the same way as the other communities in the region do.

-Employment policies

The individual and the community were in the center of the analysis throughout this study. Therefore special attention will be given to employment policies.

The many difficulties faced by employers as well as employees in the development areas, added to the aggravating circumstances under which the "island phenomenon" continued to exist. Adequate employment in terms of payments and Q.W.L. was found to have a crucial impact on eliminating the "island phenomenon." Moreover, job dissatisfaction was found to be a major impetus for emigration.

Similar to the case in Israel, in many developing countries, government policies lower the cost of capital with measures that increase the cost of labor to the firm. High social charges, together with minimum wage legislation and particular severence pay regulations may discourage increased employment in the modern industrial sector. The consequence of these policies is a bias against labor.

Most of the support subsidizes the capital while labor gets only marginal support. In a study conducted in the U.S.A. on business incentives, it was found (Harrison and Kantor, 1978):

> The jobs in those industries which most closely approximate the competitive ideal type will in general pay lower wages, offer worse (and less amply, capitalized) working conditions, provide less stable (full year and/or full week) employment, and make it more difficult for labor to organize in order to protect its class interests.[10]

There are several employment issues which deserve special attention and policy modifications. Some of them are general, and applicable to the whole country, some are unique to the two development towns and the region.

One of the main problems faced by the industrial sector in the whole country is the low image attributed to industrial jobs in general, and to production jobs in particular. High school students evaluated the work in the industry as: paying low salaries, having low status, the jobs are boring, there is not much independence, the physical conditions are uncomfortable and ugly. On the other hand the expectations and the needs created by the education system were probably difficult to meet by the work in the industrial sector. Moreover, among ex-soldiers it was found that industry's image is becoming more negative

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[10] In Israel, most of the labor is organized except for a few plants and the Arab labor force from the West Bank and Gaza Strip.

with the increase in the education level of the ex-soldiers, and that these soldiers were looking for "interesting jobs" as a prerequisite of working in the industry more than good "salaries" (The Institute for Labor Productivity, 1981).

In the country in general, and especially in the metropolitan areas, there is a new generation of plants in electronics, computer science, and other high technology sectors which can fulfill the needs and expectations of some segments of the labor force, however they are totally absent in the development towns.

It is recommended, therefore, on one hand to gear the education system in the developing areas more towards "blue collar" expectations rather than "white collar" ones, and on the other hand to encourage development of sophisticated and "clean" industries, with high Q.W.L. Stronger connections between the plants and the future employees and proper promotional activities may improve the image of the industry.

Another problem is the unemployment benefits which discourage many of the unemployed, especially among the released soldiers, from entering the labor market since the payments were almost equal to the payments in some of the plants (especially in the textile plants).

It is therefore recommended that unemployment payments be significantly lower than the payments in the

industry but accompanied by adequate training courses and on-the-job training to encourage the unemployed to take part in the industrial work.

The last issue raises the problem of the level of wages and salaries in the industrial sector. Due to the low salaries in this sector, people are reluctant to take industrial jobs. The residents of development towns get seven percent exemption on their taxes, but it does not seem to be attractive enough. It is recommended that the level of wages be increased either by incresing the exemption on taxes or by reducing other payments (like social security). The work in development areas may become more attractive to their residents as well as to outside workers, especially among skilled and professional employees needed in these areas.

This may ease the problem of shortage in managerial and professional labor force.

The unique problems which characterize the two towns are: the quality of the current labor force--which is the result of continuous existence of obsolete plants and government policies--the competition with regional plants on the "cream" of the labor force, and the inadequacy of the vocational education system in the area.

It is quite difficult to improve the quality of the current labor force which consists mainly of older males, who have been already employed for ten and twenty years. It

is more difficult to change atmosphere and attitude towards work. Nevertheless, it is recommended changing the technology in the existing plants (if there is a reasonable chance that the industry can be made competitive), and to adapt the technology to the skills and capabilities of the current employees. This means more machines and robots to replace the manual jobs done by employees today. Less control should be left for the workers who are incapable of taking responsibility, and more automation should be implemented.

The quality of working life in the plant should be improved, starting with the physical conditions through diversifying the job opportunities to increasing the involvement of the workers in the plants.

In a study conducted in 1964 (Berler, 1964), it was already found that Dimona--among other towns--had relatively less vocational education facilities compared to other towns. In addition, this study found that the system did not operate in accordance with the needs of the industrial plants and graduates found themselves without suitable jobs in the towns. There should be more coordination between the industrial sector in the towns and the region and the vocational education system.

- Entrepreneurship and management

Behind most of the successful and viable plants, one may find active entrepreneurs but more important, good managers. The significance of good managerial staff cannot be underestimated.

Lack of entrepreneurship and competent management are problems faced by the whole Israeli industrial sector, but they are more severe in the development areas, in which they are scarce and when available they have the following disadvantages: First, most of the managers are "outsiders," people who commute everyday to the towns, this, increases the dependence of the communities on the "outside" world. Second, many of them are young and inexperienced who see in their work in the development towns a "spring board" to better jobs in the metropolitan areas.

Until local entrepreneurship and management systems are developed, the Ministry of Commerce and Industry should direct entrepreneurs to the towns after conducting market research and consulting regarding the suitable industrial branches.

Local entrepreneurship and management should be encouraged. It was found that enterprises established and managed by local residents have a better chance to succeed. This will also contribute to decreasing dependency.

8.3. Conclusions and Suggestions for Further Research

Has the population dispersal goal been achieved? Could it be achieved by implementing different policies? What were the results and consequences of the policy?

The first question is out of the scope of this study. The study has concentrated on implementation, on the ways and tools used, and mainly on the consequences of one type of policies--the industrialization policies.

Based on this study, it is suggested that the critical error commited by the politicians and the implementors of the population dispersal policies was in their short-sighted perception of the meaning of the goal. Instead of adapting a comprehensive perception of the whole system--the national economic, social and educational systems, the policies have been narrowed down to places, and economic and social development programs have been replaced by welfare, almost charity programs.

The government should have implemented a broader policy of development of social, physical and economic infrastructures, so that the places themselves will attract the desirable population, instead, they have concentrated on tax incentives for the individual and the plants. Improved roads not only change the subjective feelings of the local residents, they have an impact on the type and quality of incoming residents.

In 1952 an economic advisor to the government--Professor Tron, who had extensive experience in economic and development projects in the developing countries, suggested that most of the money received from the German government be invested in infrastructure:

> If the aim is to industrialize the country, and to create an independent country, the first step is to invest in cheap and efficient transportation systems, cheap electricity, water systems and in developing skilled human capital (labor force). Such an infrastructure will attract industrial capital by its own mertis. If the country will not use the money this way, this may be the last chance to become independent. (Zohar, 1974)

Professor Tron suggested that all of the resources be invested in a single comprehensive development program rather than separate programs for each government department. Inspite of the general approval of the program by all high-rank officials, the program has never been implemented. In 1953, Professor Tron resigned and left the country.

From the analysis of the implementation policies it is quite obvious that a mixture of time pressure, ignorance, lack of experience, shortage in resources or political considerations coincided to create what is termed today as "failure of the policy." Moreover, there are always some unforeseen circumstances like the "Six Day War," the "Yom Kippur War," other pressing economic problems like balance of payments and the oil crisis, and especially political changes which may interfère even with the best development program.

In a way, the policy was bound to fail. Altman and Rosenbaum suggest: "The use of development towns for example, illustrates how ideology offers goals but not entirely adequate means of implementation, while in the case of rural settlements, both ideology and means were provided" (Altman and Rosenbaum, 1973).

The situation from the onset was less favorable for proceeding in the right direction. There were failures in the location of several of the development towns, but also the various attempts to reverse the situation were not adequate, i.e., there was misunderstanding regarding the processes and their long-range consequences and the policies implemented were not adequate including the industrial policies. Nevertheless, it will be extremeley difficult to prove that the government did not care or had any interest in keeping the situation as it is.

When the administration began to realize what was happening, they have changed policies. The new direction in estalishing and populating the towns of Arad and Carmiel are examples of such a change. Moreover, today the development of new areas is based on providing well developed infrastructures for the settlers, while the latter are free and independent to build their own homes and plants.

These new policies have not solved the problems faced by the existing development towns, and changes in circumstances further hinder their chances to recover.

One final remark should be made regarding the two case studies, Yerucham and Dimona. These two towns are quite different in their historical development, and degree of success. Dimona is considered to be one of the most successful development towns, while Yerucham is considered to be one of the least successful. Nevertheless, the processes and the circumstances experienced by Yerucham earlier, due to its weakness, have been experienced by Dimona and other successful towns in recent years, and this should signal a warning to the policy makers.

There are several issues which should be further analyzed and studied in order to improve the industrialization policies and make them more effective.

a. The suitability of the industry to the community should be studies on a larger scale, i.e., all the industrial towns in Israel should be studied in the same way the cases of Yerucham and Dimona were analyzed. A study of a larger sample of development towns with different backgrounds, in various locations and in different stages of development may give more adequate answers to issues like: suitability and stage of development, economic and industrial connections between the town and the region, etc.

b. The issue of the impact of the various levels of "distance" on remote settlements should be studied thoroughly. The various levels of distance are found to have a crucial effect on the success of the population

dispersal policies. Ways to reduce their impact should be found, as well as means to integrate the remote settlements with the rest of the country, and to eliminate situations like the "island phenomenon."

c. To what extent has a "dual employment market" been developing in Israel? Is there a process of segmentation in the labor force? (According to race--Jewish and Arabs? According to country of origin--Ashkenazim and Spharadim? or according to sex?). Segmentation of the labor market is a dangerous process which should be eliminated by regulations and adequate policies.

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